TECHNOLOGY DEPT.

PUBLIC LIBRARY
OCT 14 1943
DETROIT

'It's Important to Know In Time'

Member Associated Business Papers, Inc.; Audit Bureau of Circulations.

The Newspaper of the Industry

Air Conditioning & REFRIGERATION NEWS

Production Tools for Victory

AN INTERNATIONAL INSTITUTION ★ SUBSCRIBERS ALL OVER THE WORLD ★

Technical Governmental

Reentered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1879. Trade Mark Registered U. S. Patent Office. Copyright, 1943, by Business News Publishing Co.

'Written To Be Read on Arrival'

Issued Every Monday at Detroit, Michigan

OCT. 11, 1943

Vol. 40, No. 6, Serial No. 760
Established 1926.

Inside Dope

By George F. Taubeneck

Discovery
Taxes
Politics
Moth Control
Cold Storage Shortage
Metals 'Loosening'
Young Men Have Gone West
Germany's Oil
Less Paper Work?
Latin America's Gold
Peace This Year?
Surplus Materials
The Creeps

Discovery

It is now possible, we are told, to reveal a little more about "cycle-weld," which is probably one of the discoveries of the age.

"Cycle-weld" makes possible the joining of light metals, wood, rubber, and plastics without riveting or welding. This noteworthy achievement is accomplished with the aid of a special, secret cement—which is applied to the surfaces which are to be joined, after which heat and pressure complete the cycle.

For the duration the Chrysler Corp., whose development it is, offer it free to any manufacturers of war equipment.

Taxes

Congress will definitely carry the ball on taxes for 1944, which means that you can disregard any scare stories dreamed up by the Treasury department. You can count on it that while taxes are sure to be increased, those increases will not be drastic. You can also count on it that no retroactive taxes on 1943 incomes will be passed.

Individuals will possibly pay a little more next year, but not so much as you may think. Suggested changes: elimination of the earned income credit, reduced exemptions. For the first time, Congress will probably lay its heaviest tax increase on the lower incomes. It is now fully recognized that these brackets have profited most by war inflation.

Corporations will also pay more, we are told—but not so very much more. Much will be made of the fact that the Treasury's estimates of its 1943 income from taxes were decidedly low.

Politics

David Niles is now showing a bit more of his strategy as the unofficial campaign manager for the Fourth Term.

It would appear that he is not only trying to pacify restive labor groups, but that he is also trying to woo the real forgotten man — the white-collar worker whose income hasn't shot up during the war. This means more gestures toward "little business."

Moth Control

Among the odd new uses for air conditioning which have sprung up out of the war is that of moth control for the Army Air Forces. At the Air Service Command supply depots, air conditioned warehouses are set aside for the storage of flying jackets, gloves, and other aviator's clothing.

In these air conditioned warehouses the temperature is varied. One day it will be 70 degrees, the next 18 degrees, and the following five days it will be held at 40 degrees. Then the cycle will be repeated. The moths don't go for that chills-and-fever treatment.

Other air conditioned warehouses are utilized by the Air Service Command at supply depots for the stor-

(Concluded on Page 10, Column 1)

Wholesalers, Marketing Experts Debate Postwar Distribution of Appliances

NEW YORK CITY—What those in the business and independent marketing experts expect to see in the course of postwar distribution of electrical products is neatly revealed in the report just issued on the recent meeting of the Post-War Planning Committee of the National Electrical Wholesalers Association.

Selective distribution, chain store selling of electrical products, and a need for reducing costs all along the line were among the principal factors designated as likely to affect the course of postwar distribution of such products.

Those in attendance included: Herbert Metz, chairman, and E. B. Ingraham and L. F. Latham of the N.E.W.A. Post-War Planning Committee; R. Beller and R. J. Brown of the N.E.W.A. sub-committee on appliances; L. M. Nichols, chairman, technical sub-committee of N.E.W.A. Operating Cost Committee; Charles G. Pyle, managing director, and Alfred Byers, secretary, of the N.E.W.A.

The following individuals were present by special invitation:

Prof. Albert Haring, Professor of Marketing, School of Business of Indiana university, President, American Marketing Association, and Vice Chairman of Marketing Committee of the Committee for Economic Development.

S. Morris Livingston, Chief of the National Economics Unit of the U. S. Department of Commerce, Washington, and author of the book —"Markets After The War."

Carl H. Henrikson, Jr., Regional Director, U. S. Dept. of Commerce, New York.

Donald Hobart, Manager, Research Department of Curtis Publishing Co.

Wm. Gordon, Research Department, Curtis Publishing Co.

J. M. Bickel, Vice President, Carrier Corp.

Leading off the discussion, Mr. Hobart declared that his daily mail contains letters from many manufacturers producing a variety of consumer goods. Predominating as the principal inquiry in those letters is the question as to post-war distribution. Consideration of that question naturally must take into account a number of related factors, to several of which Mr. Hobart gave particular emphasis.

Mr. Hobart indicated the importance of selective distribution. By this he explained, was meant a market where limited dealer outlets was the rule as against a market supplied by indiscriminate dealerships.

Illustrating these extremes he cited city "A," as an example of a market in which the number of dealer outlets was restricted, or limited, by careful selection. City "B," on the other hand was named as the opposite example, i.e., indiscriminate dealer selection. The former case represents a generally stable market, whereas the latter condition brings about the reverse.

At this point there followed considerable discussion about the consumers' thinking regarding prices, and the general situation as it is affected by the large mail order houses, the controlled and restricted retail outlets and the filling station chains.

The point was developed that possibly one of the reasons for the seeming edge that the mail order houses and other chain stores have on price was due to their considerable purchasing power.

However, it was generally agreed that the purchasing power of these chains, as reflected in manufacturing costs, should represent no difference over that enjoyed by the manufacturer of advertised brands, in view of the fact that he placed larger orders on his factory than was true of the mail order houses. In other words, he, too, "bought" in large quantities.

The point was made that it was very logical that if these retail chains are able to offer lower prices

(Concluded on Page 2, Column 1)

Salesmen Can't Make More This Year Than Last Without Approval

WASHINGTON, D. C. — The Sept. 4 order requiring approval before salesmen earning more than $5,000 can be paid commissions totaling more than last year, even though the rate remains the same, will not be rescinded by the Treasury Department, declares A. E. Burford, deputy commissioner in charge of salary stabilization.

A clarifying statement will be issued shortly, Mr. Burford said, to allay fears in selling circles, but chief concern there is that even though the Treasury Department may be lenient in granting increased commission payments, the deluge of requests would create delays in paying salesmen.

25 Ft. Limits Okayed For Copper Tubing Used For Connections

WASHINGTON, D. C.—Amount of copper tubing that can be used for a "refrigerant connection" in commercial refrigeration systems under Schedule VI of Limitation Order L-126 has been increased from 15 feet to 25 feet in an amendment to Schedule VI issued Sept. 30 .

Section (b) (1) (i) of Schedule VI to Order L-126 now reads:

"(1) No person shall use copper or copper base alloy pipe or tubing for:

"(i) Any refrigerant connection, except that such pipe or tubing not larger than ⅝ inch size (O.D.) may be used, in a self-contained system, or as permitted in subparagraph (b) (i) (xii) of Schedule II to Limitation Order L-126, or where such refrigerant connection does not exceed 25 feet in length; or

(ii) Any service connections."

'More Material For 1944,' WPB Told by Industry

Replacement of Essential Refrigeration Equipment Impossible Otherwise

WASHINGTON, D. C. — "Greatly augmented amounts of materials" are needed in 1944 to repair, maintain, and furnish replacements for essential refrigeration installations, WPB has been told by a Task Committee of the General Refrigeration and Air Conditioning Industry Advisory Committee.

"The estimated amount of necessary replacement equipment for 1944," said the official WPB report on the meeting, "indicates that considerable equipment is being operated beyond its normal life expectancy at present, and that it will be impossible to make necessary replacements in food processing and storage facilities, and in industrial installations of refrigeration unless the amount of equipment available in 1943 is greatly augmented next year."

A preliminary outline of a proposed complete revision of General Limitation Order L-38 (Industrial and Commercial Refrigeration and Air Conditioning Committee) has been presented to the Task Committee for comment.

Gov't Reports on 'Freon' Situation

WASHINGTON, D. C.—Shortages in the supply of "Freon-12" refrigerants will continue for some months, members of WPB's General Refrigeration and Air Conditioning Industry Advisory Committee and of the Industrial Refrigeration Industry Advisory Committee were told at a recent joint meeting.

The completion of a new plant in February, 1944, will provide some relief, government officials stated, and there is some possibility that another plant will be built.

The Task Committee appointed to investigate civilian requirements for "Freon-12" presented a preliminary report based on existing commercial and industrial refrigeration and air conditioning equipment.

Findings indicate that civilian requirements for 1944 will be 11,400,000 pounds. To this figure approximately 2,000,000 pounds should be added, the report stated, to make up for the deficit incurred during the second half of 1943.

Civilian requirements for 1945 were estimated at 13,000,000 pounds.

Ill. RSES Plans 2-Day Meeting Over Oct. 16-17

ROCKFORD, Ill. — Sixth annual convention of the Illinois Association of the Refrigeration Service Engineers Society will be held Saturday and Sunday, Oct. 16 and 17, in the Crystal Room of the Hotel Nelson here.

Sessions are scheduled to begin at 4 p.m. Saturday with a special meeting at which committees will be appointed and a discussion conducted on "Your Refrigeration Problems." President Earl Seaton will preside.

An informal dance and entertainment is planned for Saturday evening.

The convention business meeting

(Concluded on Page 28, Column 1)

Greenwood Will Direct Carrier International

SYRACUSE, N. Y.—Herman Greenwood has been elected vice president of Carrier Corp. in charge of its International Division, effective Oct. 1, announces Cloud Wampler, president.

Mr. Greenwood comes to Carrier from United States Steel Export Co., where he was vice president for six years. Previously he had been vice president of International General Electric, and during his 17 years with that firm, he spent more than 10 years in various South American countries where he pioneered in opening new markets. He also served as

(Concluded on Page 28, Column 3)

Locker Men Told They Face Threat In Home Freezer Unit

DES MOINES, Iowa—Refrigerated locker plant operators will be confronted by full-flight campaigns of makers of home and farm freezer-storage equipment, Prof. Sleeter Bull of the University of Illinois told the recent convention of the National Frozen Food Locker Assn. here.

Small home freezers marketing for probably as low as $200 will be on the market, he predicted, and the possibilities presented in the air transport of perishable foods are another factor. The alert locker plant operator, Prof. Bull said, will be equipped to service home storage units and to handle air-transported frozen foods.

In discussing the far-reaching changes which aviation may bring in the food distribution and processing fields, Professor Bull said: "I am told by a friend who pilots a Flying Fortress that temperatures go as low as 45° below zero at certain heights. It is not an uncommon practice for a crew to take aboard a container of ice cream mix in this country and land in Africa with the ice cream frozen and ready to eat.

The possibilities are obvious, he pointed out. A plane taking off in Louisiana with fresh strawberries will be able to land a few hours later in Boston with frozen berries for the market there. And when the plane leaves Boston it is loaded with fish for Chicago. At Chicago the plane picks up a load of steaks for New Orleans and lands with the frozen product a few hours later.

"You may claim that the cost of such transportation will be prohibitive," he said, "but I am informed by men who know what it costs to transport material by plane that the cost for delivering fish from Boston to Chicago ought not to run more than 10 cents a hundredweight with capacity cargo. The rail cost runs more than 10 times that figure."

"In 1939 there were 1,861 locker plants located in 38 states," he told his audience. "According to my good friend Ken Warner of the United States Department of Agriculture, there are now 4,559 plants.

"Every state except Rhode Island has from one to 571. Rhode Island probably does not have room for a plant, but Iowa has 571. As evidence that the industry is growing up, I call to your attention an article in the Aug. 21, 1943 issue of 'The National Provisioner,' the magazine of the meat packing industry, headed, 'Locker Industry Large; Many Units Compete With Packers.'

"Whether the industry is now in the adolescent or the senile stage is open to argument. More about this later. At any rate, the locker industry has had a very rapid growth, accompanied by growing pains of more or less severity, located primarily in the neck.

"Among the causes of these pains may be enumerated: (1) Poorly designed plants; (2) improperly insulated cold storage rooms; (3) only one compressor where two or three would reduce power costs and provide a standby machine for emergency use.

(4) Too high temperatures in the locker room. I still get occasional letters from locker patrons stating that the temperature of their locker room is 15 or 20 degrees;

"(5) Improper freezing; (6) improper wrapping; (7) unfair, i.e., too

(Concluded on Page 8, Column 1)

Inventor of 'Aerosol' Tells Why 'Freon' Was Chosen

WASHINGTON, D. C.—Why and how "Freon-12" was selected for use in the "aerosol" bomb used by the Armed Services to combat insect pests — particularly malarial-bearing mosquitoes—was described before a record attendance at the recent meeting of the Baltimore-Washington section of the A.S.R.E. by Dr. L. D. Goodhue, Senior Chemist, Bureau of Entomology and Plant quarantine of the U. S. Department of Agriculture.

Dr. Goodhue is the scientist who, with his co-worker Dr. W. N. Sullivan, developed "aerosol." He explained that older forms of insecticides which require a mixture of oil to produce mortality settle completely in about two minutes. To increase its effectiveness, an insecticide

(Concluded on Page 28, Column 4)

Distribution of Appliances May Face Overhauling In Postwar Era, 'Experts' Tell Wholesalers

Specialty Dealers Still Needed To Introduce New Products, But Prices Must Drop Is Belief

(Concluded from Page 1, Column 3)

it might be because of the fact that they represent a simplified and direct selling channel with a relatively small retail mark-up.

It was emphasized that, by and large, the retail selling chains were not a factor in the sale of an appliance until that appliance became more or less of a staple. The manufacturer must rely on the accepted wholesale and retail channel of distribution as a means of getting his appliance to market when that appliance is in the promotional stage.

Stressed here was the fact that low manufacturing costs for appliances made for the development of private brands, and the market is definitely affected by this type of merchandising.

Lower Selling Costs

Opinions were expressed further that manufacturing cost factor alone would not be sufficient in post-war selling. Lower distribution costs, both wholesale and retail, must also be achieved. Closely related to these factors, asserted Mr. Hobart, is the question—"How much will the consumer be willing to pay, post-war, for appliances to be brought to him?"

In view of the fact that mark-ups in the retail field, particularly in department stores, are recognized as playing such an important part in the selling prices of appliances, considerable discussion was had on this point. Views on that point were quite uniform that dealers ordinarily have operated on the principle of a "number" (discount) in their buying and selling of appliances.

The opinion prevailed that dealers by no means associated their own "numbers" with actual costs of selling or servicing, but rather always strived for the highest possible "number," regardless of those basic elements of pricing. They reason that lines with high "numbers" (discounts) can be handled so as to offset price deficiencies of other lines of merchandise they are unable to procure except at considerably lower discounts.

Greater Discounts?

It was, therefore, seriously questioned as to whether it is advantageous practically, or sound economically, to meet dealers requests for greater discounts, prior to study and a satisfactory indication that greater discounts would be in order.

The discussion on dealer mark-ups referred to the retail distributive situation up to the start of the war. One view predominated as a result of the discussion. That was that the entire economic problems as to appliance distribution required overhauling for the post-war period.

For one thing, it was stated that the Post-War prospect appeared to be a trend toward lowered consumer prices. Due to changing population concentrations it was suggested that it might even be impossible to absorb sales at a profit in every area.

Wholesaler's Function

Summing up this discussion, Mr. Hobart declared his views to be that in the post-war era the electrical wholesaler who performs necessary functions in the best interests of the retailer and the consumer will continue to do business. He felt, moreover, that the electrical wholesaler would do a good economical and competitive job in that respect. Beyond that, he expressed two particular, and important, ideas:

1. The electrical wholesaler must see that the retailer performs the functions for which he, after all, receives the margins. Those margins are only justified when he performs a good service for the consumer.

2. Manufacturers, in order to avoid undesirable pressure selling, should with their distributors—make honest market studies to determine just what the market situation really is.

Specialty selling by wholesalers and their retail dealers, according to Mr. Hobart's final statement, has been more responsible than anything else for building up the nation to its present high standard of living comfort for the people generally.

Dr. Haring then led the discussion and opened with the opinion that problem No. 1 is the fast disappearing retail dealer. Figures he has examined and discussions he has participated in, he believed, indicate a definite diminution of retail outlets by the Spring of 1944. This reflects a real responsibility for the electrical wholesalers to see to it that their responsible dealers are kept in business for the duration of the war.

Opinion contrary to Dr. Haring's was summed up by Mr. Latham's assertion that many dealers would enter the appliance merchandising field after that war because of the greater merchandising opportunities it will hold.

Face Tremendous Selling Problem

Reference was made by Mr. Nichols to the newer factor of present war materials manufacturers entering the electrical appliance field, post-war. They may have some highly valuable advantages, he said, by way of plant costs written off against war production profits, adequate machinery and operators available, and low cost policies to consumers established in advance of actual achievement of those costs.

Present electrical manufacturers being actually face to face with those very possibilities should, individually, in Mr. Nichols' opinion, take their own distributors into their confidence as to their post-war plans for their merchandising policies. So far as discounts are concerned, Mr. Nichols believed that functional discounts are more sound that straight quantity discounts.

Educational Program

Regarding the incoming manufacturers, Mr. Livingston suggested that these are essentially "engineering" managed, and that their merchandising job would necessarily be a tremendous one. On that point, Mr. Brown thought that, persuaded by advertising, sales promotion, and selling programs of recent years, perhaps everyone at this meeting would choose to buy one of four to six well-known makes of refrigerators, for example, instead of one of the newly introduced models after the war.

Sales training for distributor and retailer personnel was declared by Dr. Haring to be most necessary. He described briefly Indiana university's 10 hour training program for retailers in Indiana, declared locally to be as thorough as three weeks actual store training. Other activities of this kind are being pursued in other parts of the country, with which, Dr. Haring suggested, the Association's Post-War Planning Committee might well keep in touch.

Tell Your Plans

He suggested also that the Association itself may wish to consider preparing just such a program for the electrical appliance field. It was generally felt that the Association might consider promoting and conducting an educational program that would cover the fundamentals of wholesale marketing as well as the specialized field of electrical appliance and supply distribution.

The subject of prefabricated housing was generally discussed in its relation to the distribution of appliances and supplies. If these houses are to be erected and sold with wiring and appliances built-in, there might result a loss of prospective markets for both electrical contractors and wholesalers. Although there are many unknown problems lems involved in the Post-War sale and distribution of prefabricated houses, it is interesting to note that G. Fox & Co., a large department store of Hartford, Conn., has already started a merchandising program that has as its object the sale and distribution of prefabricated houses in the Hartford territory, post-war.

New Competition

The question of the manufacturers' demonstrated willingness to let their distributors know about their post-war plans attracted the attention of the group. After several experiences were related it was apparent that there had been displayed, so far, no general attitude by manufacturers to say much about their future plans, at least to their distributors.

However, Mr. Latham reported that one of his suppliers had requested his company to indicate what its first six months—post-war—requirements would be and to place his order for them now. The explanation for the suggested ordering ahead was that by so doing Mr. Latham's company would not lose its delivery position by the accumulation of prior orders. Those present were of an opinion that this was entirely high pressure and not constructive planning.

Should Ask Distributors About New Designs

Another suggestion made by Mr. Henrikson was that manufacturers be urged to consult their distributors before designing and introducing new models. Everyone present agreed wiht the soundness of that idea. Moreover, it was expressly stated that that method would insure better products, easier selling, and lowered prices.

Agreement was unanimous that one of the most important operational phases of the electrical wholesalers business after the war will be that conducted by his Credit Department. Extension of lines of credit will require the most careful scrutiny of financial, marketing and merchandising factors.

Credit Important

Only individuals adequately trained and experienced in credit and collection procedures can be expected to cope with the requirements of the situation in the post-war years. Whether or not the Credit Department will be a business builder, or will constitute a bottleneck to the electrical wholesalers operations, will depend chiefly upon the quality and size of that department being in proper proportion to the job it is called on to do.

Unquestionably, in the opinion of this entire meeting, a great deal depends on the electrical wholesaler's handling of that situation. New accounts will involve tough credit problems. What will the policy be with respect to them How about the policy regarding bad debt losses? These are the type of problems to which the electrical whoesaler now must devote attention in order to have his house in order, at least so far as his Credit Department is concerned, in the post-war years.

System Will Prevail

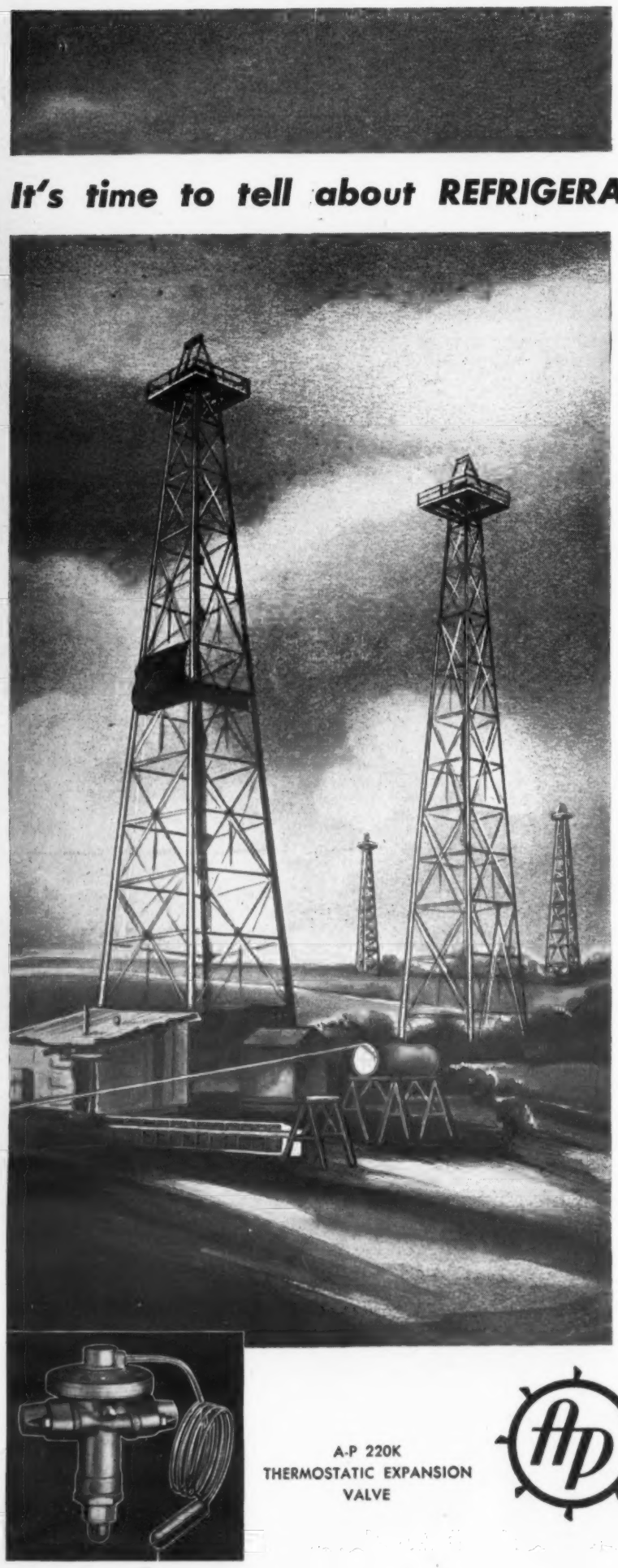
The day's meeting was primarily devoted to the problem of post-war appliance distribution for it was felt that insofar as electrical supplies were concerned, that the present wholesale plan of distribution would prevail post-war as it has for many years pre-war.

As Dr. Haring puts in—"In my estimation, the electrical wholesaling industry is efficient and the lowest cost type of distribution available for moving wire, conduit, and similar equipment to users.

"Except for the field of consumer appliances and other items which become so standardized and perfected that they can be handled as packaged items, I do not believe that the electrical wholesaler is seriously challenged."

L. W. Nuckols, Sr., Dealer In Richmond, Dies

RICHMOND, Va.—Laughton Watkins Nuckols, Sr., 58, president of Dabney & Bugg, electrical appliance dealers, died Sept. 29 at a local hospital. He had been president, secretary, and treasurer of the firm of F. W. Dabney & Co.



It's time to tell about REFRIGERATION'S "hidden services"

Take OIL for instance...

REFRIGERATION HAS HELPED the great petroleum industry solve some of its most perplexing problems, and plays a vital role in delivering the millions of gallons of gasoline, kerosene and lubricating oil to our Armed Forces and our immense National Transportation System.

THE COMPLETE STORY of Refrigeration's great contribution to this Industry would take a good-sized book, for Refrigeration enters practically every operation, from the time crude oil comes from the ground to hundreds of phases in refining, distillation, fractionation, rectifying, deasphalting, dewaxing, and many others.

FOLLOWING CLOSELY the improved techniques in Oil and Gasoline Refining, A-P DEPENDABLE Refrigerant Controls find ready service in many phases of the Industry's use of REFRIGERATION. In this Industry, as in many others, research men are making full use of the aid offered by the A-P RESEARCH DIVISION in perfecting new products, new controls for ever greater mechanical efficiency.

AUTOMATIC PRODUCTS COMPANY
2450 N. Thirty-Second St. Milwaukee 10, Wis.

A-P 220K
THERMOSTATIC EXPANSION
VALVE

DEPENDABLE
REFRIGERANT VALVES

Dependable Refrigerants
VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

America's Largest Manufacturer of Aircraft Propellers

This is the intricate Hamilton Standard propeller we're building by arrangement with United Aircraft Corporation, for ten of the world's most famous planes . . . bombers, troop transports, and cargo carriers.

It's this marvel of precision engineering that carries mighty Flying Fortresses and Liberators through tremendous daylight precision bombing raids over France and Germany, and in the Jap-infested islands of the South Pacific.

It's this propeller, which the skilled men of Kelvinator are helping to build, that speeds the swarms of fleet Mosquito bombers that slip in at dusk to deliver the deadly stings to paralyze German war industry. And it's these "props" that lift and carry giant Lancasters on night bombing shows for the British . . . medium bombers, huge transports, and cargo carriers—"laying eggs" and delivering men and materiel to war fronts the world over.

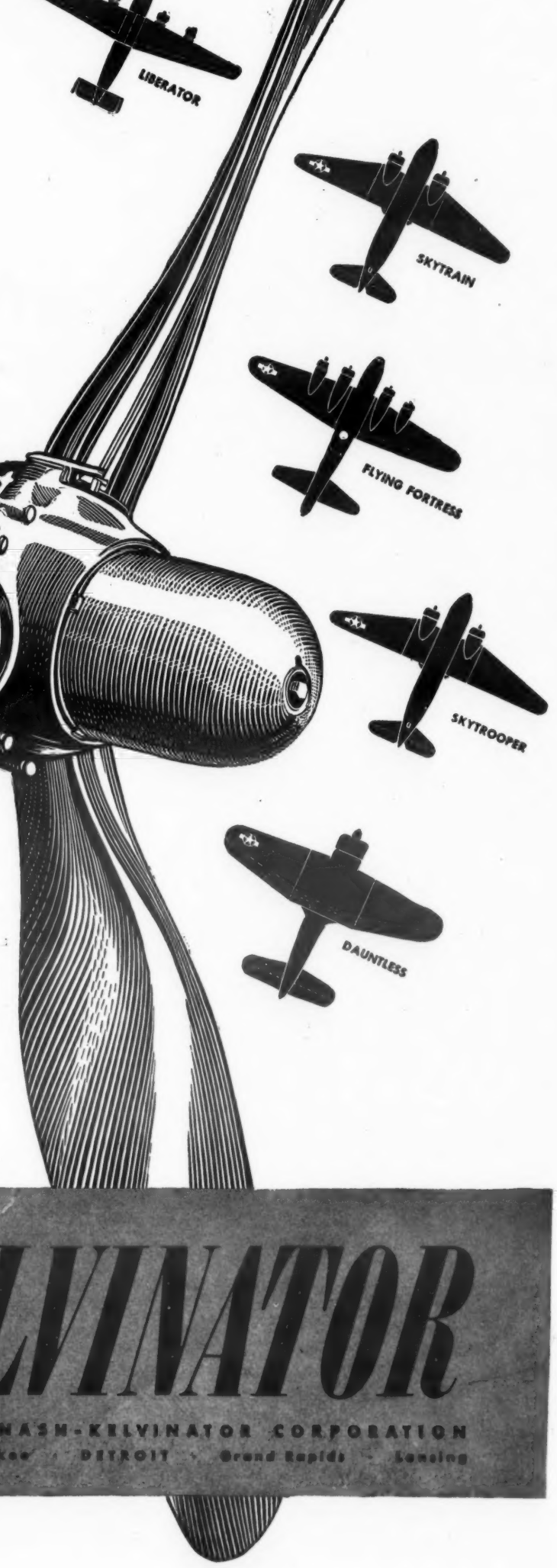
The men and women of Kelvinator may well be proud of the part they are playing in the Victory that's surely coming . . . for Nash-Kelvinator is America's largest manufacturer of aircraft propellers . . . and the products of their hands, and hearts and brains are in the forefront of the attack that's smashing our Axis foes. These shining blades, they hope, will soon bring home to them their sons and brothers and loved ones . . . will soon make certain on some day not too far away that they may turn again to the production of peaceful things—to the building of an even greater Kelvinator than they have built before.

And when that day comes, Kelvinator will be prepared with another forward-looking program, another great new Kelvinator and a franchise again the finest in the industry.

SCRAP IS POWER

Cooperate with your industry! Salvage all inoperative parts containing critical materials . . . put vitally-needed scrap back into the scrap TODAY!

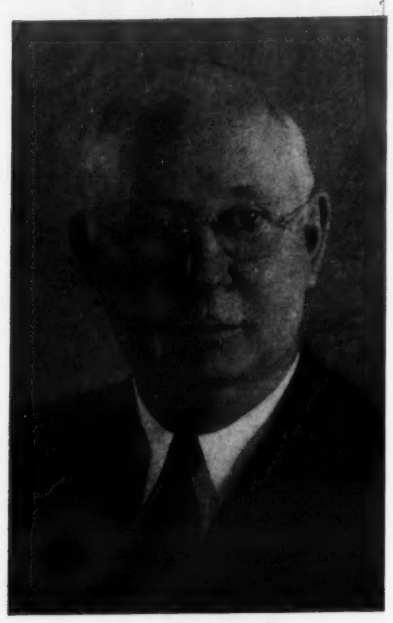
The men and women of the Propeller Division of Nash-Kelvinator Corporation have been awarded, and proudly fly and wear, the famous Army-Navy "E" for High Achievement in War Production.



LOOK AHEAD WITH KELVINATOR

DIVISION OF NASH-KELVINATOR CORPORATION
Kenosha · Milwaukee · DETROIT · Grand Rapids · Lansing

Ralph Penn Will Direct Penn Engineering



RALPH PENN

* * *

GOSHEN, Ind.—Ralph Penn, treasurer of Penn Electric Switch Co. has been appointed director of engineering, Albert Penn, president, announces.

For the past several years Ralph Penn was in charge of the company's special development plant in St. Louis. Recently, however, this department was moved to Goshen and consolidated with the research laboratory at the home plant.

Mr. Penn has been with the company since its founding 25 years ago.

Seamless Tube Limit Moved to Jan. 1

WASHINGTON, D. C.—Extension of the time limit on use of seamless steel tubing, and permission to use non-ferrous metals, as reported in Oct. 4 bulletin issue of the NEWS, is confirmed by the official War Production Board amendment to Schedule III of Limitation Order L-126.

Excerpt from the order on non-ferrous metals follows:

"(1) In the manufacture of any coil or tube assembly for condensers or of any coil or tube assembly for coolers, no producer shall, except for use aboard ship,

"(i) Use any non-ferrous metals, except

"(a) For soldering or brazing materials, or

"(b) For protective coatings, or

"(c) For any coil or tube assembly for water coled condensers as defined in paragraph (a) (3) of this schedule, or

"(d) For coolers which come in direct contact with dairy or egg products (whether or not the coolers have a protective coating)."

Permission to continue use of seamless steel tubing is given as follows:

"(iii) The use until Jan. 1, 1944 only, (in the production of, fabrication of, or the delivery, acceptance or installation or coil or tube assemblies for condensers or coolers of the finned type only) of seamless steel tubing where (a) the tubing is expanded to obtain the bond between tubing and fins, or (b) the tubing is ⅝ inch O.D. size or larger."

S. F. Malcolm Promoted By Borg-Warner

S. F. MALCOLM

Recently named advertising manager of Borg-Warner International Corp., he is also export sales manager for both refrigeration and automotive products.

* * *

DETROIT — S. F. Malcolm has been named advertising manager of Borg-Warner International Corp., according to R. W. Gifford, president. Mr. Malcolm, who will retain his present responsibilities as sales manager, came to Borg-Warner in 1938 from Melchior, Armstrong, Dessau Co.

Black, Former Ford Advertising Director, Named Assistant to Wibel of Kelvinator

DETROIT — Fred L. Black, one-time director of advertising for the Ford Motor Co., has been appointed special assistant to A. M. Wibel, vice president of Nash-Kelvinator Corp., announces George W. Mason, president.

"Mr. Black will be actively associated with Mr. Wibel in government contract and liaison work involving control of materials, and contract re-negotiation and terminations," Mr. Mason said, adding that Mr. Black's long experience in the automotive industry "will be of particular assistance in overcoming the problems which are sure to be involved in the transition from war production to back-to-peacetime operation."

During his 23-year association with Ford in public relations and advertising work, Mr. Black served as director of advertising from 1927 to 1933. From 1933 to 1940 he directed Ford exhibits at the World's Fair in Chicago and similar exhibits in San Diego, Dallas, Cleveland, San Francisco, and New York City.

After leaving Ford, Mr. Black became commercial agent for the state of Michigan with the U. S. Department of Commerce, and later did industrial postwar planning for the Detroit Board of Commerce.

Mr. Black, a graduate of Miami university, is a member of the Engineering Society of Detroit, the Detroit Adcraft and Scarab clubs, and the Explorers Club of New York City. He is president of the Detroit Phi Beta Kappa association.

He is chairman of the Michigan Public Relations Committee of the National Aeronautic Association, and from 1937 to 1942 was a member of the board and secretary-treasurer of the Edison Institute at Dearborn. He is also a member of the Board of Trustees of the Cranbrook Institute of Science.

Mr. Black has written numerous articles on Abraham Lincoln, the archaeology of the American Indian, and travels, and in 1930 collaborated with W. A. Simonds to write "From the Ground Up," an aviation book for boys.

FRED L. BLACK

Comes to Nash-Kelvinator to assist in government contact and liaison work and to help prepare for the return to peacetime production.

Craft Heads Newark Office of Mueller

NEWARK, N. J.—Paul L. Craft has been named district manager in charge of sales in this area for Mueller Brass Co., a post formerly held by the late Mr. A. P. Relken.

Mr. Craft was for several years district manager of the company's Cleveland, Ohio, territory and has had more than 20 years experience with Mueller Brass.

He will be assisted by Leonard L. Parker, formerly assistant sales manager of Mueller's refrigeration division, and Ray M. Cary, a member of the Newark office for several years.

Appliance Design Won't Change Radically, Dealers Told

YOUNGSTOWN, Ohio — "Simple postwar merchandise, better and lower prices, and new and exciting designs" are the main objectives of the electrical industry after the war, according to James Hugo of Westinghouse Electric & Mfg. Co., Mansfield, Ohio, who spoke to district appliance dealers at a recent dinner sponsored by Westinghouse and the Moock Electric Co. here.

But don't expect radical changes in designs of electrical appliances until some time after the war ends, Mr. Hugo cautioned.

"It is impossible to shove radical design changes down the throats of Americans, and although we have talked over all the newest ones, including plastic refrigerators and glass ranges, there is time for all that later."

Designs for newer models in all electrical appliances are already on paper, he said, but the tool and design rooms of all large electrical companies do not intend to produce anything but war materials until the war ends.

"However, should the war end in a month, we have new designs all planned and ready for construction as soon as possible thereafter."

Glenn M. Nutter of the Moock Supply Co. and G. P. MacFarlan, Youngstown branch manager, had charge of the dinner.

Are you planning for tomorrow . . . TODAY?

Then, now's the time to

CALL IN SERVEL

If you have any post-war product that requires controlled cooling—whether it be comfort cooling at 70° above zero or sharp freezing at 70° below zero, or something in between—whether it takes a fifth of a horsepower or fifty horsepower—Servel engineers can help you solve your problems.

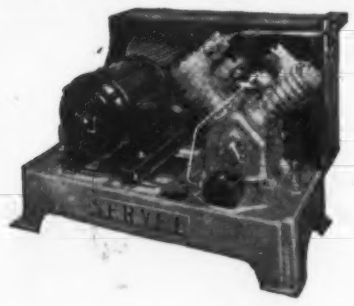
TO HELP YOU PLAN—Your Servel adviser has behind him over twenty years of experience to steer you away from the costly pitfalls of the past, PLUS intensive wartime research that has pointed to new and better ways.

TO HELP YOU PROVE—Your final test models can be shipped to Servel's "Hot Rooms," where they can be tested quickly and scientifically at any condition of temperature and humidity that may be encountered anywhere in the world.

TO HELP YOU SELL—Servel's sales organization can help you find the customers you need—can help you plan your selling program—can tell you where to get Servel service from coast to coast.

NOW AND POST-WAR—Servel condensing units can be depended upon to do their job efficiently year in and year out, but our efforts to improve them never cease. Our post-war line will include many outstanding advancements that will give you greater sales appeal at lower cost.

Servel Condensing Units for Every Cooling Need



1. Store Fixtures
2. Milk Coolers
3. Home Lockers
4. Beverage Coolers
5. Vending Machines
6. Air Conditioning
7. Locker Plants
8. Stratosphere Testing
9. Coolant Cooling
10. Truck Refrigeration

SERVEL, Inc.

ELECTRIC REFRIGERATION AND AIR CONDITIONING DIVISION

Evansville 20, Ind.

› › THERE IS NO SUBSTITUTE FOR EXPERIENCE ‹ ‹

Kelvinator Chiefs Are Justly Proud Of Propeller Production Record

Campbell Wood (right), general manager of the Propeller Division of Nash-Kelvinator Corp., discusses with George Mason, president, the function of some of the parts of the Hamilton Standard hydromatic propeller. When the Army-Navy "E" was awarded this division recently, the company learned it was the largest propeller producer in the country.

Here's another WARTIME HELP FOR FRIGIDAIRE DEALERS

Buy more War Bonds for Victory

New General Motors Motion Picture

"How to Get the Most out of Your Refrigerator"

Because of the keen interest shown in the information provided in Frigidaire's WARTIME SUGGESTIONS booklet and advertising, General Motors has made available a talking picture which dramatizes the technique of carrying out many tips on refrigerator care, food storage and food preparation.

Requests for more than 6,000,000 copies of the WARTIME SUGGESTIONS booklet are ample testimony that this story is of genuine interest to homemakers. Now dramatized in motion picture form, it's another means of helping Frigidaire dealers to build good will in their communities. Equally important, it's an added way of keeping their names before postwar prospects.

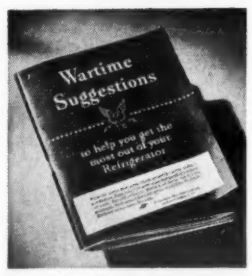
Authentic information

This instructive film is based on material furnished by editors of leading women's service magazines and reviewed by government authorities . . . and was prepared under the technical direction of Frigidaire's Home Economists and Service Specialists. Closeups show what to put in a refrigerator and what to leave out. How best to store different kinds of foods. Meat-keeping suggestions. Ways to combat food waste. Wartime recipes. Meeting service problems. And many other practical suggestions.

How dealers benefit

Since the information given in this film is of such vital interest to every housewife as well as to Home Economists and Home Economics Students, Frigidaire dealers have been quick to grasp this new opportunity to render a genuinely helpful service. Many who have suitable facilities are arranging for special showings. Others are making the film available for showings by a wide variety of interested groups—Home Economists' Instruction Classes and Cooking Schools, Women's Clubs, Red Cross Units, Civilian Defense Organizations, Parent-Teachers' Associations, and many others.

FREE booklet for film audiences



To provide film audiences with an ideal printed record of what they saw in the motion picture, copies of Frigidaire's popular 36-page WARTIME SUGGESTIONS booklet are available without charge for distribution at film showings.

FILM FACTS

A 16-mm. sound motion picture, 30 minutes in length

A visual "Wartime Refrigeration Cooking School"

Designed for showing to such groups as:

Home Economists' Instruction Classes and Cooking Schools

Women's Clubs *Red Cross Units*

Civilian Defense Meetings

High School and College Home Economics Classes

Parent-Teachers' and 4-H Club Meetings

Contains no advertising

Offered free — no rental charge

NOTE: Inquiries regarding booking of this film should be addressed to Department of Public Relations, General Motors Corporation, 1775 Broadway, New York City, or 405 Montgomery St., San Francisco.

For Excellence ARMY E NAVY *in War Production*

Listen to GENERAL MOTORS SYMPHONY OF THE AIR; Sunday afternoons, NBC Network

FRIGIDAIRE Division of GENERAL MOTORS

Peacetime builders of Home Appliances, Commercial Refrigeration, Air Conditioners

Army Refrigeration Problems

By P. B. Reed

Electric Refrigeration and Air Conditioning Division, Servel, Inc.

Loading of Condensing Unit Motors

It has been the accepted and common practice in factory and other industrial uses of electric motors to match the load with the full-load rating of the motor as shown on the motor nameplate and to protect the motor against overloads in excess of 15% of full load.

For example, a small screw machine requiring 3 hp. at maximum loading—deep cuts of tough material at maximum speed—would have a 3 hp. motor on it. At full load this motor would draw about 8 amperes per phase of a 3 phase 220 volt line and the overload elements in the starter would have a rating of 9.2 amperes 115% of full load.

The manufacturers of magnetic starters have for years worked closely with the motor manufacturers and the recommended overload protection shown in the cover of the starter is based on 15% overload, although it may vary somewhat—perhaps as high as 25% and as low as 5% depending on the rating of the overload element nearest in value to 115% of full-load current.

Because of the scarcity of motors the War Production Board has asked that advantage be taken of the 15% factor and for the duration at least industrial motor loadings are on the basis of putting a 1 hp. motor on a 1.15 hp. load and setting the overload relay for a 25% maximum overload.

There is quite a good deal of difference between the usage and loading of motors on industrial machines and on refrigerating condensing units. In the case of the condensing unit the operation is usually intermittent and the motor gets a chance to cool between runs. Usually also the load becomes less at the end of the run than at the beginning as the suction temperature and pressure is reduced.

Type Is Important

Another important factor bearing on condensing unit motor loading is the type of motors used. The refrigeration motor is a heavy duty type motor, designed and built for starting heavy overloads and having around 400% "locked rotor torque," that is, to instantaneously develop about four times full load torque to get the compressor to "turning over from dead center."

Thus, the motors on condensing units are loaded much beyond the industrial 15% overload. They are capable of carrying a 40% overload almost indefinitely and as much as 60% to 65% overload for short periods.

Practically all responsible manufacturers of refrigerating condensing units comply with rules of the National Board of Fire Underwriters. In general these rules provide that motors rated under 1 hp. having built-in overload protective devices are given separate study by the Underwriters Laboratories, but in practice the motor manufacturer takes care that any of these motors that he offers to the refrigeration industry shall easily carry 40% overload for hours even in a 100° room and much higher overloads for short periods.

The built-in overload device is a bi-metallic relay operated by heat from the motor and from the current in the supply line. Heat is what damages motor insulation, so as long as the heat is not excessive it is not so important what the current is. This type of motor overload device is by far the best of all types but at present is available only on AC single phase motors up to and including 1 hp. Most condensing unit manufacturers use the motor with build-in overload in these sizes and types in which it is available.

The only other protection this type of motor needs is a fuse to protect the circuit wiring against a short-circuit or ground developing in the motor or wiring. The fuses should be at least 3½ to 4 times the full load current rating of the motor to allow for the heavy in-rush of current at starting.

The controls — pressurestats and thermostats — are usually rated at 1 hp. AC so that no starter is necessary with single phase AC motors up to and including 1 hp., that is, those that have built-in overloads, but as most of the controls used are single pole, a starter is used with all sizes of polyphase (3 or 2 phase) motors as two legs at least, of a three phase line, must be broken.

Permissible Loading

Motors 1½ hp. to 5 hp. inclusive, not equipped with built-in overload protectors may be loaded up to 140% of full load, and above 5 hp. up to 125% of full load. For example, a 2 hp. single phase AC, 60 cycle, 220 volt motor has a nameplate full-load current consumption of 11.6 amperes so the ultimate tripping value of the element (frequently referred to as "heater coil") in the overload relay in the starter should be 16.24 amperes for 140% protection.

For a 10 hp. three phase, 220 volt, 60 cycle motor the full-load current is 26 amperes per phase. To protect it to 125% loading the overload element sohuld have an ultimate tripping value of 32.5 amperes. The line fuses for this motor should be at least 80 amperes; 90 ampere fuses would be even better, for if one fuse in a three phase line blows it is possible for the motor to burn out on "single phasing" and yet the overload relay in the starter stay in, that is, this overload relay will not necessarily protect the motor against "single phasing."

140% Overload Possible

The practice in the refrigeration industry of loading condensing unit motors up to 140% or 125% of full load frequently causes some confusion in industrial plants, army camps or other locations where the maintenance personnel are accustomed to the 115% loading practice; but it should be borne in mind that the refrigeration practice is quite justified by operating conditions and by the types of motors used and that it has the approval of the authority on such matters, the National Board of Fire Underwriters.

The motor industry has developed the electric motor to a very high degree of perfection. The modern electric motor will operate for thousands of hours with very little care other than an occasional cleaning and oiling and it is safe to say that fully 90% of troubles experienced with electric motors are not defects of the motors but instead are traceable to:

What Causes Defects

Failure to oil the motor or keep it reasonably clean;

Belts too tight or out of line;

Under-voltage or overload resulting from such conditions as: high discharge pressure due to air in the system, overcharge of refrigerant, warm condensing water (water-cooled unit), inadequate air circulation or dirty condenser (air-cooled unit);

High suction pressure due to excessive heat load;

Too large an evaporator;

Too much blower air;

Tight compressor;

Using a low-temperature condensing unit (one having the motor loaded at 0° F.) on a medium temperature or air-conditioning application.

The service engineer should very carefully check all of these points before pronouncing the motor defective, especially a new motor.

Graves Refrigeration Is New Atlanta Jobber

ATLANTA, Ga.—R. M. Graves, a director of the National Refrigeration Supply Jobbers Association, has organized Graves Refrigeration here, which has been accepted as a member of the jobbers organization. Mr. Graves was formerly president of Bowen Refrigeration Supplies, Inc. here, which he left to form to the new company.

Alcoa offers you

5 NEW "HOW-TO-DO-IT" MOVIES on Forming Aluminum

HOW TO FORM ALUMINUM
GENERAL SHEET-METAL PRACTICE
Basic information on sheet alloys, tools and general shop methods. Both theory and practice are included.

HOW TO FORM ALUMINUM
DRAWING, STRETCHING and STAMPING
The how and why of drawing, stretching, stamping and other press operations are explained. The design of the tools, methods of lubrication and other factors are described.

HOW TO FORM ALUMINUM
TUBE and SHAPE BENDING
Hand and machine methods for forming aluminum tubes and shapes are illustrated and described in some detail.

HOW TO FORM ALUMINUM
BLANKING and PIERCING
Deals with the design and operation of blanking, perforating and piercing tools. Suggests layout methods. Clearances and lubrication are discussed.

HOW TO FORM ALUMINUM
SPINNING
Describes proper methods and techniques for hand and mechanical spinning, as well as "what not to do". Also discusses tools and equipment.

FIRST PUBLIC SHOWING
at Alcoa headquarters, National Wartime Metal Congress, Palmer House, Chicago
OCTOBER 18-22

These five brand-new, how-to-do-it sound motion pictures are now available for your instructional work. They may be borrowed or purchased; 16 and 35 mm sizes. For further information, write ALUMINUM COMPANY OF AMERICA, 1975 Gulf Bldg., Pittsburgh, Pa.

ALCOA ALUMINUM

AIR CONDITIONING
THE WORLD OF
Tomorrow
NIBCO
WROT Fittings
AND TUBULAR PARTS
AIR CONDITIONING in the homes and buildings of the future will be as common as refrigeration is today. NIBCO is proud to have had a part in the development of better air conditioning equipment in the past... and NIBCO WROT and Cast Fittings and parts will play a big role in the post-war expansion. Whenever you need fabricated tubular products or non-ferrous castings, valves, or fittings, specify NIBCO for lowest production cost. Precision makes assembly easy. We'll be glad to help you now in post-war planning.
NORTHERN INDIANA BRASS CO.
ELKHART, INDIANA
VALVES AND FITTINGS SINCE 1904

The Priorities Quiz

(Air Conditioning & Refrigeration News, with the aid of a man who is actually engaged in handling much priorities work, will attempt to answer questions from readers about priorities problems. The editors will not guarantee to answer all questions, nor can they guarantee that the answers will be legally perfect, but an effort will be made to provide a guide to correct procedure wherever possible.)

What More Can Local WPB Offices Do For You?

Q. We understand that local WPB offices are gradually being given more authority. Can you tell us of some specific case which would indicate just what this increasing authority permits the local WPB offices to do for us?

A. There are several important changes taking place which will enable local or regional WPB offices to be of more help to you. Until recently, WPB local offices have had authority to approve PD-1a applications for preference ratings on material costing less than $500. This authority is now increasing by permitting the processing of applications up to a value of $1,000.

In 90 days, this authority will be extended to applications of a value of $2,500. This means that the great majority of PD-1A applications will no longer be routed to Washington. This should mean a direct saving of at least one week's time in the handling of these applications.

On Oct. 15, 1943, WPB field offices will start processing construction applications for projects costing up to $10,000. Previously, all such applications were sent to Washington for approval even though filed with WPB field offices. This authority includes the right for WPB field offices to approve construction projects for remodeling present facilities and costing between $5,000 and $10,000.

Emergency assistance (for improved ratings) has been handled by field offices on Form PD-333 where the value was under $500. This authority is to be increased to $1,000 within the next 30 days and to $2,500 within 60 days. AAA ratings, however, will only be issued by the Washington office.

* * *

(Note: Order P-126, the Emergency Service Refrigeration and Air Conditioning Order has recently been completely revised. The following questions are those being most frequently asked regarding these changes.)

* * *

No Need To File For Any Certificate Under P-126

Q. Do the terms of the revised P-126 Order require that service agencies refile with the War Production Board for a serial number and a certificate of authority?

A. No. Any individual or any type of business organization which engages in repairing refrigeration and air conditioning systems belonging to others may proceed without any further authority than that given in the revised order to apply preference ratings to purchase orders in accordance with the terms of P-126. Serial numbers are no longer assigned.

Owners Who Service No Longer Can Apply P-126

Q. Under P-126 before revision, we did our own service work on our refrigerating and air conditioning systems and were authorized under a serial number granted by the WPB to use the ratings assigned by P-126. Does this serial number we received under the former P-126 permit us to use the new ratings under the revised order?

A. No. Owners of refrigeration and air conditioning systems doing their own service work may no longer use the ratings granted by P-126. Such owners must now rely upon the MRO ratings given in CMP Regulations No. 5 or 5-A.

Certain Raw Materials Available Under P-126

Q. Does the revised P-126 order provide for the purchase of raw materials as well as parts?

A. Yes. In this respect, P-126 is similar to CMP Regulation No. 5 in that it authorizes the use of allotment symbol "MRO" for the purchase of controlled materials except aluminum and except to buy controlled materials for any use to which a Class III rating is given (that is, no raw materials can be purchased on the MRO symbol for refrigerating and air conditioning systems used for industrial and commercial purposes not listed in Schedule I or II of CMP Regulations 5 or 5A or, in Class II of P-126).

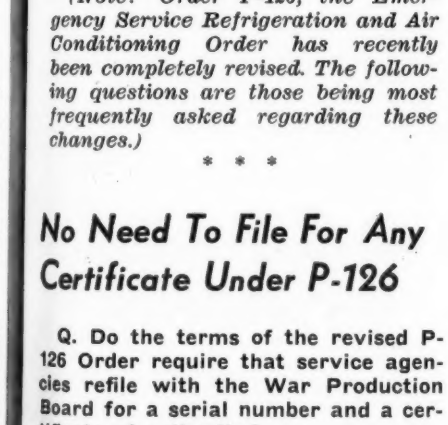
Re-rating of Orders Under P-126 Revision

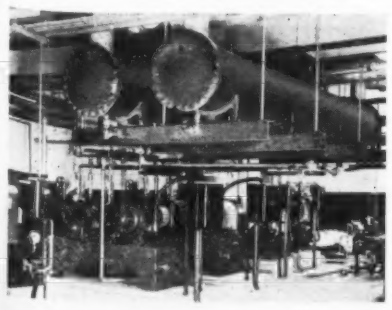
Q. The revised P-126 order authorizes the use of a AA-2 rating where previously it authorized us AA-4. What will happen to orders placed under the AA-4 rating but not yet delivered? Will the new AA-2 orders be shipped ahead of the undelivered AA-4 orders which in some instances have been on file with suppliers for several weeks? Does the new P-126 authorize us to rerate these orders to the new rating?

A. This is a question which will require an official interpretation to answer completely. However, because of the fact that priorities Regulation No. 1 still insists that orders be shipped in sequence according to their preference rating suppliers will be required to ship your AA-2 rated orders ahead of the AA-4 orders even though the AA-2 orders are received weeks after the AA-4 orders.

The revised P-126 order, however, permits the use of an AA-2 preference rating to purchase parts and materials needed by the service agency in building up its inventory to the largest inventory allowed.

"Largest inventory allowed" is defined as an inventory not larger than needed to service and repair systems for a 60-day period as determined by an agency's current method and rate of operation. If a service agency's inventory does not equal the "largest inventory allowed" that agency may properly rerate unfilled AA-4 orders to the new AA-2 rating for the purpose of building up its inventory to the "largest inventory allowed."



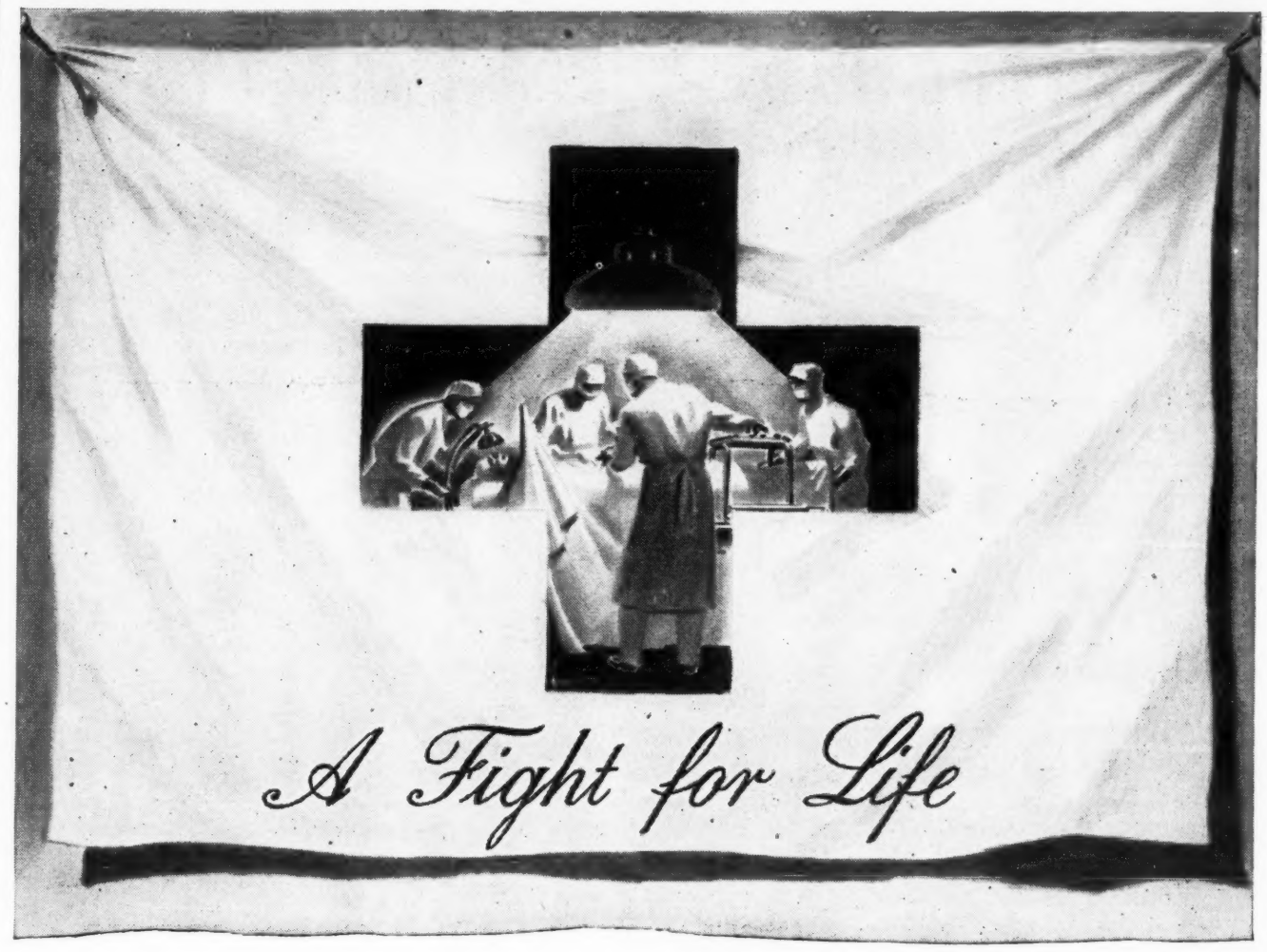


DRY-EX WATER COOLERS

For air conditioning indirect cooling . . . and processing water in large volume . . . Dry-Ex Water Coolers are daily proving their advantages in many diversified installations. Of shell and tube construction, advantages include: Small required refrigerant charge; simplified refrigerant control; positive oil return . . . and other advantages. Write for Catalog No. 5.

ACME INDUSTRIES • Jackson, Mich.

ACME PRODUCTS



Working tirelessly, day and night, to save the lives of our wounded soldiers and sailors, stand the Army and Navy doctors and hospital attendants. To aid the wounded and maimed in their fight for life, and to help doctors and nurses to withstand the terrific strain of their arduous duties, operating, X-ray and recovery rooms on land and sea are kept comfortable with air conditioning. And refrigeration stands guard over vital serums, perishable medicines and blood. Without these, no amount of effort and devotion to duty would save so many of our fighting men.

Many thousands of Detroit Expansion Valves, Solenoid Valves, Controls and Contact Makers are in use in this life-giving service.

The reputation gained by Detroit refrigeration equipment in peacetime is being heightened by its performance in time of war.

The reliability of "Detroit" and "DL" Refrigeration Products assures the best possible results from refrigeration and air conditioning. If you have need for refrigeration equipment, specify "Detroit" for unfailing performance.

DL

DETROIT LUBRICATOR COMPANY

General Offices: DETROIT 8, MICHIGAN

Division of American Radiator and "Standard" Sanitary Corporation

Canadian Representatives—Railway and Engineering Specialties Ltd., Montreal, Toronto, Winnipeg

★ "DL" Heating and Refrigeration Controls • Engine Safety Controls • Safety Float Valves and Oil Burner Accessories • Radiator Valves and Balancing Fittings • Arco-Detroit Air and Vent Valves • "Detroit" Expansion Valves and Refrigeration Accessories • Air Filters • Stationary and Locomotive Lubricators ★

Prof. Bull Cites Own Experience To Back Belief That Home Freezers May Boom

(Concluded from Page 1, Column 4)

high or too low costs for rentals and processing; (8) poor salesmanship; (9) inadequate service, e.g., lack of facilities for curing meat, rendering lard, and processing fruits and vegetables;

"(10) Ignorance of the customer as to the length of time meat can be left in the locker, resulting in the operator being accused of carelessness; (11) ignorance of the customer as to the amount of meat which can be cut from a quarter of beef or a carcass of pork, resulting in the operator being accused of theft; (12) sanitation; and others too numerous to mention.

Standby Equipment Needed

"The other day I had a long distance call from a lady who had a locker filled with meat, poultry, strawberries, and vegetables. The motor had burned out in the locker plant. Before repairs could be made, all the food in 321 lockers had spoiled. This catastrophe could have been avoided if the plant had had a standby motor and compressor with the proper hookup.

"Coincident with the growth of the industry, many of the problems of construction, equipment, and operation have been solved either by experience or research. Most of the newer plants have been satisfactorily designed, constructed, and equipped.

"The faults of design, construction, and equipment of most of the unsatisfactory older plants have been remedied. Most operators now carry the temperature of the locker room at zero or thereabouts. Most operators now know there is no substitute for cleanliness.

"Most patrons know that pork will not retain its freshness indefinitely; that a 150-pound hind quarter of beef will not cut out 150 pounds of steaks; and that the meat from an old stag will not taste like a young barrow when it comes from the locker.

Biggest Problems Today

"As I see it, the biggest problems of the locker operator today are to find space for his patrons, to follow meticulously the many government orders and directions, to know that DFDO 75.1 supersedes FDO 27 and 61 and their amendments, and to make out correctly the proper reports from FDA, OPA, and DSC, not to mention those for the collector of internal revenue.

"The postwar problems of the industry deserve some attention at this time if we are to solve them correctly when the present unpleasantness is over. The locker operator now is in a favorable position as regards volume of business. Whether he will retain it in the postwar period is questionable.

"It is true that both the farmer and his city in-laws have been sold the ideas of home gardens, home produced meat and frozen foods. Some of these will return to the corner grocery and meat market for their food, but many of them will continue to produce their own in part, particularly if the United States attempts to feed a large part of the world for several years after the war is over. This does not necessarily mean that the locker will continue as their food bank.

Just Getting Their Start

"Before Pearl Harbor, deep-frozen foods were just getting their start with the distribution of specialties kept cold with dry ice. Tomorrow's great improvement will be a home refrigerator capable of storing large quantities of foodstuffs at temperatures below zero, providing space enough to supply a family of four for as long as two months.

"Supporting these household units will be a world-wide system of food-preparing centers — including many famous restaurants — where meats, vegetables, salads, deserts, even bread and cake will be frozen, packaged and shipped to stores in every city and town.

To Market Once a Month?

"Marketing will be done as infrequently as once a month or less. When you shop, you will make a day of it, stocking up your larder with a complete variety for many weeks in advance. When there will be no tedious daily routine of buying for a few meals at a time.

"Your future market will be a huge affair carrying everything you will need to feed your family and your guests in any season. You will never hesitate to buy far ahead, for the frozen foods will keep indefinitely without loss of freshness or flavor.

"In my opinion, we will have satisfactory home freezers at a reasonable price. Let me illustrate.

What Experience Showed In Quality of Meat

"A small local factory made 300 home freezers and sold them at $300 installed and tax paid. I put a quarter of beef in one of them. The temperature was 20° below zero when I put it in. The next day I set the temperature at zero. I froze and stored similar cuts from the other side of the carcass in the Experimental Locker Plant at the university. Three months later we were unable to distinguish any difference in meat frozen and stored by the two methods.

"A meter on the box showed a power cost during November and December of $2.20 a month on our city rates, 2.6 cents per K.W.H. This particular box holds 9.8 cubic feet as compared with 5 to 6 cubic feet in a locker. If a local plant can manufacture and sell a few hundred of these boxes at $300, there is no question in my mind about the ability of modern, mass production selling as good or better boxes for $200.

The Farmer Likes Equipment

"I also call to your attention that electricity is now available on many farms at a very low rate. In my own county (Champaign, Illinois), 50 to 55% of the farmers have electricity on their farms. The lowest rate bracket, for which most of them would qualify if they installed a home freezer, is 1.5 cents per K.W.H. If the present farm prosperity continues after the war, undoubtedly more farmers will install electricity and more farmers will purchase refrigerating equipment. Remember, the farmer loves to buy machinery even when he doesn't have the money to pay for it.

"Let us make a comparison of the costs of lockers and home freezer storage for a family of four, with the understanding that some of my figures are only rough approximation.

(Concluded on Page 9, Column 1)

Cost Comparison Between Plant Locker and Home Freezer For a Family of Four

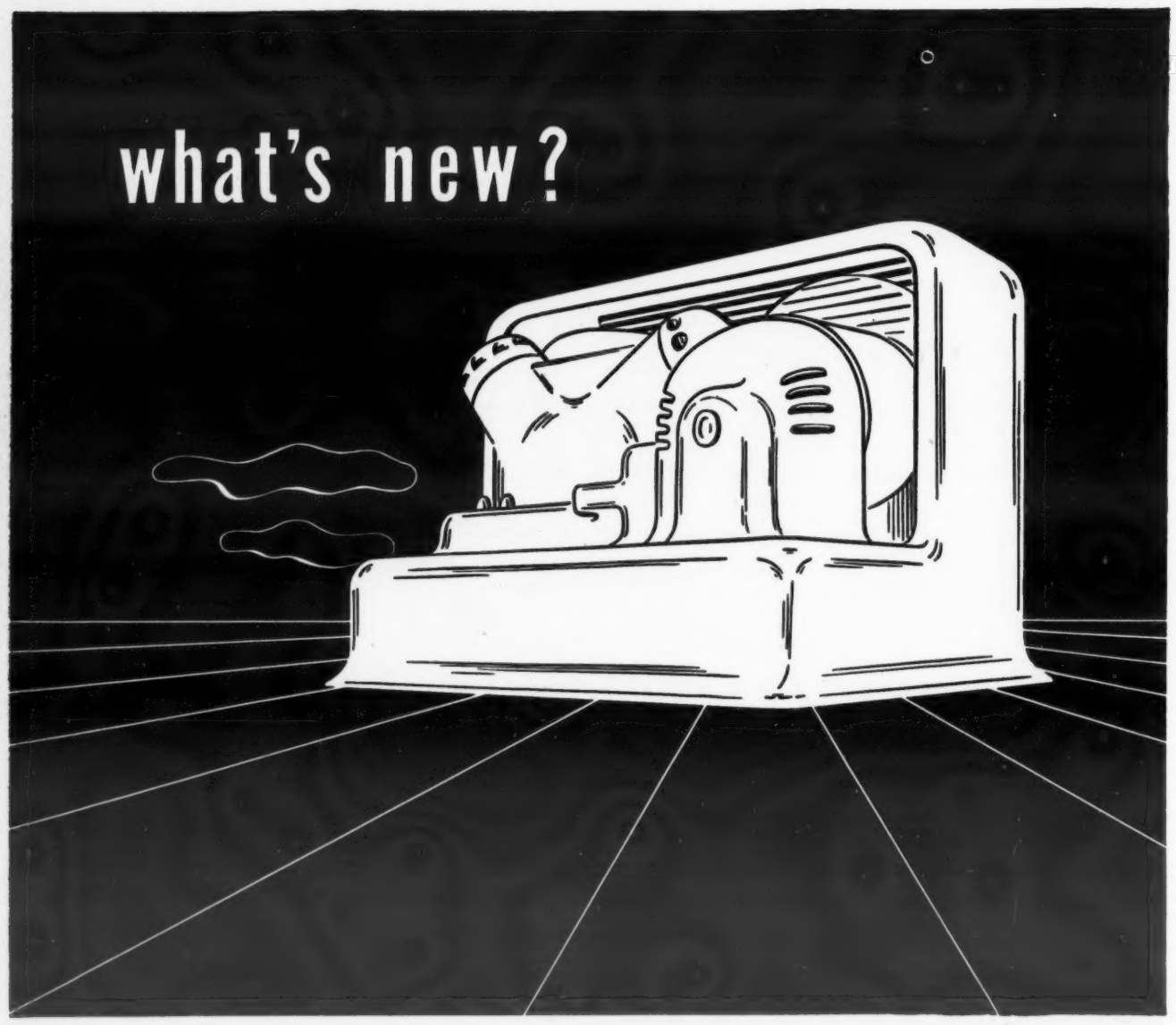
COST OF LOCKER STORAGE

Slaughtering 560 lbs. of meat	$ 3.00
Processing 560 lbs. of meat	11.20
Processing 500 lbs. of fruits and vegetables	10.00
Rental, 2 lockers	24.00
Value of fats, etc., retained by locker plant	2.00
TOTAL	$50.20

COST OF HOME FREEZER STORAGE

$200 at 4% interest	$ 8.00
200 at 10% depreciation and maintenance*	20.00
Power, 90 K.W.H. per month at 1.5 cents	16.20
Paper for meats, 10 lbs. at 12 cents	1.20
TOTAL	$45.40

**(The estimated average usefulness of refrigerating equipment is put at 15 yrs.)*



"LET'S ASK UNIVERSAL COOLER"

Plans outlining "What's New?" in refrigerating units already have advanced beyond the drawing board. At Universal Cooler, these plans reveal . . .

- sound design-engineering based on nearly a quarter century of pre-war leadership.
- extra unit ruggedness and efficiency as a result of meeting wartime demands.
- practical vision to help you achieve your post-war refrigeration equipment objectives.

WRITE TODAY!

Our expanded research-engineering department is prepared to handle your inquiry regarding . . . Frozen Food Cabinets • Food Storage Refrigerators and Display Cases • Ice Cream Cabinets • Water and/or Beverage Coolers • Commercial Refrigeration Equipment • Air Conditioning • Machine Tool Cooling • Other Applications You're Planning.

UNIVERSAL COOLER

WE SELL TO MANUFACTURERS ONLY

UNIVERSAL COOLER CORPORATION • Automatic Refrigeration since 1922

MARION, OHIO • BRANTFORD, ONTARIO

Healthful Living Through FROZEN FOODS

Tomorrow's Promise

The American Farm Family will save food, time and money by FREEZING their food right on the farm . . . And enjoy a wider choice of meats, poultry, game, fruits and vegetables at their daily meals.

ARMY-NAVY "E"

Awarded Ben-Hur for Excellence in War Production

Today BUY MORE WAR BONDS

Remember the . . .

BEN-HUR

. . . FARM LOCKER PLANT . . .

BEN-HUR MFG. CO. • 634 E. Keefe Ave. • Milwaukee 12, Wis. • Established 1911

Locker Plant Operator Is Visualized As Postwar Sales & Service Agency For Frozen Foods and Home Freezer Cabinets

(Concluded from Page 8, Column 5)

"Some locker operators claim that they will get the job of slaughtering and processing. Maybe they will and maybe they won't. Most farmers can slaughter passably well or they have a neighbor who can do it for them.

"Remember in this connection that most locker plants do not now have slaughtering facilities. Many farmers can cut meat after a fashion. Undoubtedly, the Extention Service of the United States Department of Agriculture or the State Agricultural College will teach them if they can't.

Farm Prosperity May Be Key

"Of course, so long as agriculture is prosperous, and it will be for a while after the war, many farmers will rely upon the locker plant to process their meat and possibly their fruits and vegetables. During the inevitable depression which will follow, most farmers will be forced to process their own products. Remember that the rapid growth of the locker industry was due largely to the depression which followed World War I and forced farmers to eat their own meat.

"Can the locker operator solve the problem which the home freezer presents? Frankly, I don't think he can completely, any more than the horse industry solved the problems presented by the automobile and tractor. We still have horses and we will still have locker plants, but I couldn't advise anyone to invest much money in the expansion of either business.

How Aviation Will Affect Frozen Food Distribution

"Aviation may present a serious problem to the processor of frozen foods. After this war is over, we will have thousands of airplanes, thousands of pilots, and millions of air-minded people. One of my young friends recently returned from Europe after a year as pilot on a Flying Fortress. He tells me the temperature at 20,000 feet is 45% below zero; at 30,000 feet it is 60° below. According to the New York Times, some of our planes load a can of ice cream mix before the take-off and land with fresh frozen ice cream.

"With a speed of 200 miles an hour and a capacity of 30 tons, I see no reason why one of our "flying box cars" can't pick up a load of packaged, fresh strawberries at Hammond, La., and deliver frozen strawberries in Boston a few hours later; then pick up a load of packaged, fresh fish and deliver frozen fish in Chicago; then a cargo of fresh beef and land it in New Orleans ready for the consumer's home freezer.

Cost of Air Freight

"Cargo planes can carry un-mixed freight at a cruising speed of 200 miles per hour for about 10 cents a ton mile if loaded to capacity or for 14 cents a mile if loaded to 65 to 70% capacity. On the basis of the latter figure, it would cost 70 cents a hundred to ship frozen fish from Boston to Champaign, as compared with $1.32½ via rail. And the freezing would cost nothing.

"If the home freezer is as successful and as widely used as I expect, and if quick freezing and transportation of frozen foods by air is practicable, and it may be, what will become of the locker plant?

Locker Operator's Function

"Taking up the solution of the home freezer problem first, I believe that the locker operator, because of his wide acquaintance with prospective purchasers and his experience with cold storage equipment, is the logical man to sell and service them. He also is the logical dealer to sell frozen fish, frozen loganberries and other frozen products which are not produced locally.

"He should go after as much of the processing business as his present facilities will handle. However, I would not advise much expansion of this phase of the business because of the threats of postwar depression and sub-stratosphere freezing.

Good Tie-in With Air Freight

"If much of our food is frozen and transported by plane, the locker operator is in a position to supply the storage necessary in the small towns and cities and to distribute the frozen foods to retail stores, restaurants and owners of home freeze boxes.

"I realize many of you will not agree with what I have said this morning. If you believe the locker business will continue with little or no change after the war, that is your privilege in a democracy. But if my money were at stake, I'd play my cards close to my chest and be prepared to make quickly such postwar adjustments as conditions may dictate."

Zinc May Be Used In Repair Part Products

WASHINGTON, D. C.—Zinc or zinc products may be utilized in mechanical refrigerators if the latter are used for essential food storage, food transportation and industrial uses, and may also be used for their repair and maintenance, according to the WPB Conservation Order M-11-b as amended Sept. 29.

Conservation Order M-11-b prohibits the use of zinc and zinc products in a wide variety of items.

Bennett Is Manager Of G-E Specialty Dept.

SCHENECTADY, N. Y.—Howard W. Bennett has been made manager of the specialty division of the General Electric Co. Electronics Department, according to Dr. W. R. G. Baker, Vice President in charge of the department.

At the close of Carrier Corp.'s recent annual "Family Get Together" in which 4,000 employes were entertained in a 4-hour program, officials of the company pose with some of the entertainers. Left to right: Cloud Wampler, president; Lucy Monroe, RCA's Star Spangled Banner singer; Dr. Willis H. Carrier, chairman of the board; Orchestra Leader Will Osborne; Marilyn Duke, soloist; Paul Brill, treasurer, Syracuse Coca Cola Bottling Co.

Helping to Widen
YOUR POST-WAR MARKET

In this statement, the fourth by industry leaders to appear in "Architectural Record," Mr. Patorno makes several worthwhile suggestions for the postwar planning of apartment buildings.

He advances excellent reasons, based upon actual experience, for the installation of air conditioning in large, medium-priced apartment buildings. The new and wider market such a development will create makes Mr. Patorno's message interesting to architects and engineers. Kinetic Chemicals, Inc., Tenth & Market Streets, Wilmington, Delaware.

KINETIC
REG. U.S. PAT. OFF.

BACK THE ATTACK
WITH WAR BONDS

Published in the interest of air conditioning and refrigeration.

Looking Ahead in Air Conditioning with Sullivan A. S. Patorno

SULLIVAN A. S. PATORNO, *and his associated Consulting Engineers, have among their many projects designed the unusual air conditioning system for "Lusk Apartments" in New York City. In this article Mr. Patorno makes a dramatic statement on the postwar possibilities of air-conditioning medium-priced apartment houses.*

"In the early part of 1938, when the 'Lusk Apartments,' New York's first complete air conditioned apartment building, was finished, it demonstrated that year-round comfort could be made a reality. The tenants of the 'Lusk Apartments,' who had previously known only eight months of comfort, now no longer suffered throughout the four hot months.

"While the apartment house dweller of today has the use of his apartment for a period of twelve months out of the year, his apartment is uncomfortable during the summer season. But by adding cooling to the apartment, the owner can increase the comfort period by 50%, from eight months to twelve months, and give his tenants all-year comfort.

"We have been making a study for some time of the practical application of cooling to apartment houses at a minimum initial and operating cost. Our studies indicate that it is possible to incorporate cooling in apartment buildings having medium-priced rentals at an additional initial cost of approximately 10%, and an increase in the rental charges of approximately 10%. For this slight increase in cost, the owner can furnish and the tenant may enjoy an additional comfort period of 50%, or a full twelve rather than eight months.

"The constructive elements, such as life insurance companies, savings banks, real estate organizations, far-sighted investors, etc., are planning the construction of many medium-priced apartment dwellings. Our message to these people is that it will now be possible to add cooling to such buildings for a nominal increase in initial and operating cost.

"Any medium-priced apartment building *constructed in the postwar period that does not offer its tenants year-round comfort will not only have difficulty in competing with buildings providing year-round comfort, but will probably find its rate of obsolescence greater. We have singled out the medium-priced apartment dwelling because we believe that it will be the logical outlet for investment and will benefit the greatest number of people in the postwar period."*

REMEMBER—"Freon" refrigerants are non-toxic, non-explosive, non-flammable, non-irritating. They cannot harm food or clothing. By every measure they are the world's safest refrigerants. Kinetic Chemicals, Inc., Tenth and Market Sts., Wilmington, Del.

KINETIC
FREON
REG. U. S. PAT. OFF.
safe refrigerants
"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.

BACK THE ATTACK—BUY AN EXTRA WAR BOND THIS SEPTEMBER

Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1)

age of photographic supplies and precision instruments.

Cold Storage Shortage

Cold storage warehouse space is now being rationed. This has become a considerable headache to the War Food Administration, which fears that food spoilage near the source of supply may nullify its efforts to boost production.

It worries the politicos, too, who believe that if food is in short supply next year it may go hard with those candidates who want to be re-elected.

Metals 'Loosening'

As predicted here, the metals situation is "loosening." The War Production Board is now releasing copper—particularly copper tubing—for uses which wouldn't have had a ghost of a show six months ago.

Limited quantities of aluminum are being released for civilian uses, too, and inventories of stainless steel products are being unfrozen. As for magnesium, that formerly scarcest metal is now accumulating in stockpiles. But the steel scrap shortage is still critical, and most civilian "hard goods" depend primarily on steel.

Young Men Have Gone West

It took half a century for Horace Greeley's advice to sink in, but young men have gone West in tremendous numbers during this war era.

Formerly ambitious young men all sifted eastward, because there was comparatively little opportunity for them in business and industry out there. But in recent years they have stayed home, and their numbers have been augmented tremendously.

Out in the Washington-Oregon district more than a million new workers have moved in, and in California the population increase is said to be even more impressive.

Chambers of Commerce on "the Coast" are now laying plans to keep these new millions. To provide jobs for them when the shipyards shut down, and when the aircraft plants will have to find new things to do, is a problem which is furrowing plenty of tall brows.

One thought is that the Pacific Coast might try to become a point of supply for Russia, China, Australia, and Malaysia — not just a transhipping point, but a manufacturing source. The idea is that the supply of fast transport planes which will be left when war ends could best be put to use cutting the tremendous distances between the ends of the Pacific.

Incidentally, some of the West Coast manufacturers are eyeing the refrigeration, air conditioning, and appliance markets.

Germany's Oil

So many German planes have been destroyed on the ground recently in Italy, Sardinia, and Corsia that some observers believe they just didn't have the gasoline to go up. The Germans aren't usually caught napping like that.

This and other evidences of an oil shortage in Germany will undoubtedly be noted by those who direct strategic bombing. With Montgomery able to use the Foggia airfields, Rumanian oil wells at Ploesti are likely to take a terrific pasting.

The Russians are also within easy bombing range of Ploesti now, too.

Less Paper Work?

WPB's recent move to provide greater autonomy among its 13 regional offices has been hailed by some as the forerunner of a welcome reduction of paper work, and a speed-up of action on applications.

This remains to be seen. In some cases the regional offices are inadequately staffed, and so bound up in red tape that they're afraid to do much on their own initiative.

It might be noted that one reason for this decentralization move is the fact that the WPB in Washington has been losing manpower at a fairly rapid rate.

A more useful move would be to rewrite some of the "L" orders, including much clearer definitions. Thus the applications for priorities might be reduced in number, appeals would certainly be reduced, and time could be saved in deciding on applications at headquarters.

And if allocations of supplies were made for longer periods, an enormous amount of time oculd be saved at both ends of the line.

Latin America's Gold

We are buying so much more from Central and South American countries that for the first time they are able to build up substantial gold stocks. Mexico, Brazil, Chile, Venezuela and Colombia have all doubled or trebled their gold holdings.

This will give them a sound basis for their currencies, as well as a strong postwar credit situation. And so exporters to Latin America can look forward to an unprecedented surge of business when they again have the supplies.

Peace This Year?

The Pope's message hoping for peace before the year is out should not be discounted as mere prayerful conjecture. No doubt the Vatican "knows something."

None of the foreign ministries have better European sources of information than the Vatican. None is probably so well informed about internal conditions.

Our High Command, of course, must proceed on the view that Germany will make a determined stand in Russia, Italy, the Balkans, and France—at some predetermined point—and that her present retreats will end soon.

Thus bitter fighting would be required before the knockout blow could be delivered next Spring. One hopes devoutly that a sudden German collapse will not catch the strategists with their pants down.

Surplus Materials

Again comes the warning from those "in the know" about inventories of raw materials. At the war's end the government's own stockpiles will create quite a problem, and there may be one of the darndest "fire sales" of metals and other raw materials the world has ever seen.

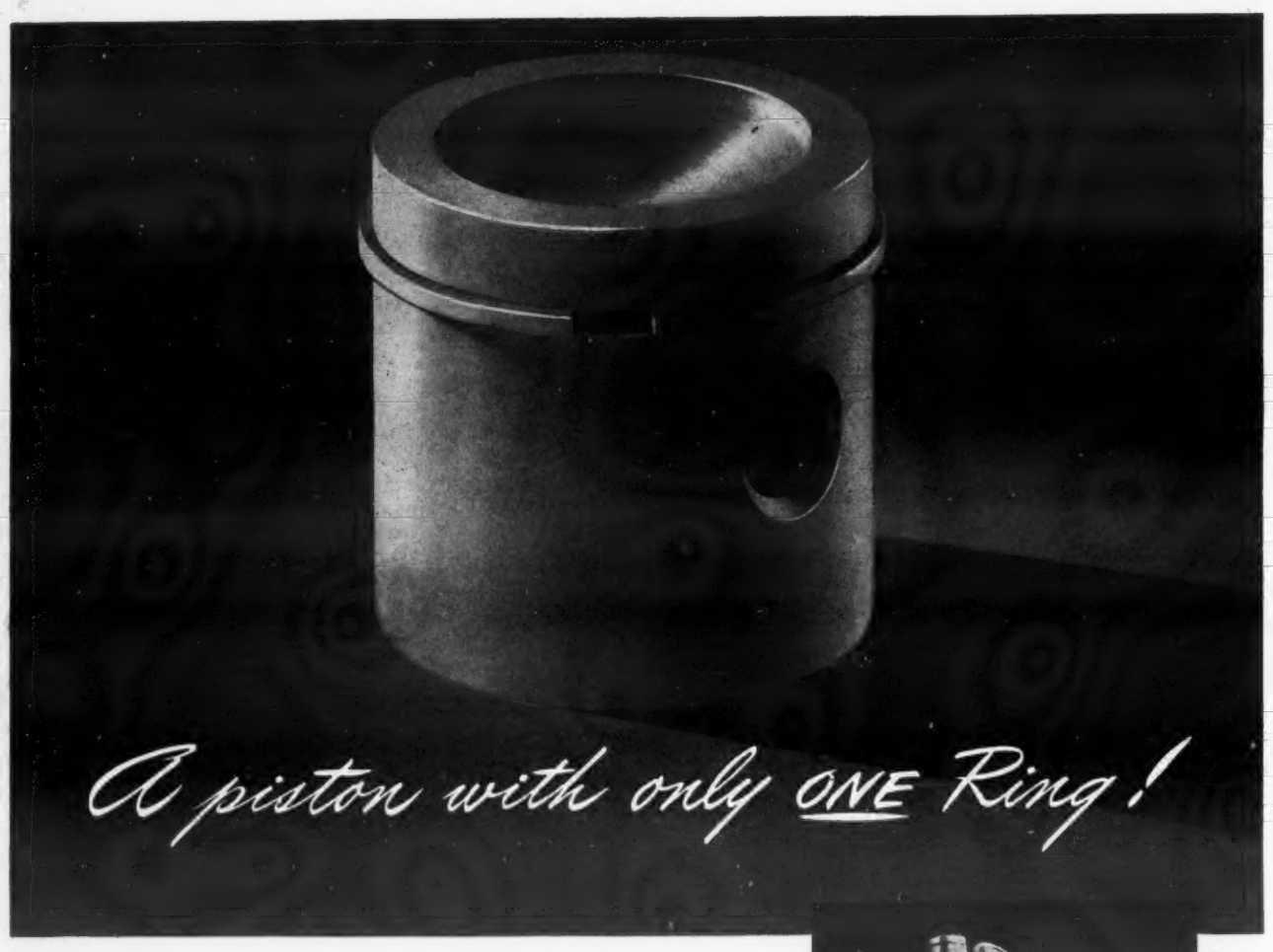
If you're buying now at the high dollar to maintain your existing stockpile, it might be well to give some thought to how large you want that stockpile to be when the "fire sale" starts.

The Creeps

You've heard of the "creeping peace," the proposal to relinquish military control of occupied territories gradually, instead of settling everything at a peace table right away.

They're now also talking about "creeping demobilization" of both men and factories. The idea is to let the wheels run down gradually so that the transition into peace won't be disastrously sudden.

It also would appear that it may be a lot harder to get out of the armed forces after the war than it was to get into them.



VARIABLE CAPACITY RADIAL COMPRESSOR

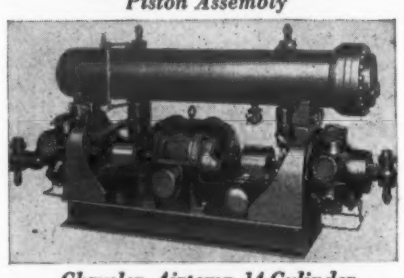
To reduce cylinder wear to the minimum, Chrysler Airtemp Variable Capacity Radial Compressors use only one ring per piston. This permits better lubrication of both cylinder walls and valves, assures long life. In fact, after 25,000 hours of operation, no appreciable wear can be found.

An efficient oil separator located in the discharge line removes practically all of the oil and returns it to the compressor. This keeps the oil content in the refrigerant at a low percentage.

Chrysler Airtemp Variable Capacity Radial Compressors are whipping air conditioning and refrigeration problems everywhere. Put Chrysler Airtemp Heavy Duty Units to work for you!

BUY WAR BONDS

Chrysler Airtemp Radial Piston Assembly



Chrysler Airtemp 14-Cylinder Condensing Unit

FEATURES: AUTOMATIC VARIABLE CAPACITY CONTROL • UNLOADED STARTING • DIRECT CONNECTED • SIMPLIFIED INSTALLATION • NON-FLEXING VALVES • PRACTICALLY NO VIBRATION • NO SPECIAL FOUNDATIONS NEEDED • INTERCHANGEABLE PARTS • LIGHT IN WEIGHT

Tune in Major Bowes every Thursday, C. B. S., 9 p. m., E. W. T.

CHRYSLER AIRTEMP

AIRTEMP DIVISION OF CHRYSLER CORPORATION • DAYTON, OHIO

"Packaged" Units 3 & 5 H. P.—Direct Expansion and Water Cooling Systems—Commercial Refrigeration

Automatic Pricing Formula for Stoves Issued by OPA

WASHINGTON, D. C.—An automatic pricing formula for manufacturers to determine their own ceiling prices of new models of domestic cooking and heating stoves has been issued by the Office of Price Administration in another move to streamline its pricing procedures.

This formula was devised to shorten the time required in fixing maximum prices on new or changed models and to enable manufacturers to calculate what ceiling prices they may expect, in advance of official notification from OPA. Previously, manufacturers were required to apply to OPA for a special order fixing ceiling prices on each new model they put on the market.

The formula now to be used by them is a simplified version of the one previously used by OPA in pricing new models, so that no basic change in pricing methods is involved. After a manufacturer determines his maximum price according to the new formula, he reports it to OPA for approval, and may sell after 15 days unless he hears from OPA to the contrary. If he receives written notification of approval sooner, he may proceed to sell at once.

Wholesale and retail ceiling prices for new or changed stove models may be established by individual orders from OPA at the same time that manufacturers' prices are approved.

The provision of a manufacturer's automatic pricing formula for new models is one of a number of changes incorporated in Maximum Price Regulation No. 64 (Sales of Domestic Cooking and Heating Stoves), which becomes effective Oct. 4, 1943. This schedule replaced Revised Price Schedule No. 64, which since Jan. 5, 1942, has governed manufacturer's sales of stoves for household use.

For new model stoves which are comparable to models on which prices already have been determined, the stove manufacturer hereafter should calculate his maximum prices in line with current prices on these comparable models. He applies to the unit direct costs (labor and materials) of the new model the current percentage margin prevailing on the most comparable model, whose costs are computed on the same basis.

In figuring his new model percentage mark-up over the direct cost of a comparable model, the manufacturer must use the ceiling price to the class of purchasers (wholesalers, retailers, mail order houses), buying from him in greatest volume.

The revision of Schedule No. 64 retains the previous pricing provisions for models of domestic-use stoves for which prices were quoted between Jan. 15 and June 1, 1941, since some of these will continue to be manufactured. The ceiling price to each class of purchaser is 112 percent of the lowest price quoted to that class of buyer by the manufacturer on a particular stove during the period mentioned.

"DAY & NIGHT"

A Complete line of Storage Type Water Coolers in accordance with Latest W. P. B. Regulations

DRINKING FOUNTAINS

NAVY-2 Models for Shipboard use — ARMY-NAVY-2 Models for land use

CAFETERIA TYPE COOLERS

ARMY-NAVY 2 Models for Mess Halls

INSULATED STORAGE TANK TYPES

6 Models for Bakery Service • 3 Models for Film Processing •

WRITE FOR LATEST DATA

DAY & NIGHT COOLER DIVISION

DAY & NIGHT MFG. CO.

MONROVIA • CALIFORNIA

FACTORY REPRESENTATIVES

NEW YORK — A. C. Homeyer, 682 Bdwy. • Marc Shantz, 565 Wash. Blvd. — CHICAGO

ST. LOUIS — R. H. Spangler, 3331 Market St. • J. E. Parker, 228 2nd St. — DECATUR, GA.

Ignoring The Seasons!

¶ It is not of great importance that THAWZONE sales for the first nine months of 1943 exceed the entire twelve months of 1942, which previously had been our best year by far.

¶ But it is significant that steady repeat consumption by the trade has developed into a constant year-round demand that ignores the warm and cold months with their usual extremes of sales peaks and valleys.

¶ Standard merchandise makes its own sales.

Use **THAWZONE** . . . *the MOVING Dehydrant*

HIGHSIDE CHEMICALS CO.

195 Verona Ave., Newark 4, N. J.

THAWZONE

Fully Protected by U. S. Patents

The PIONEER FLUID DEHYDRANT

'You Can't Train a Man to Get Along With Less Water,' Scientists Prove in Desert

When Army Cuts Down Water Supply Soldiers Drink More Pop Instead, Researchers Find at Air Base

BLYTHE, Calif. — Scientific investigation at the Army Air Base in the Mojave Desert has dispelled the theory of some Army training directors that soldiers can be "conditioned" to getting along on less water than they might consume normally.

(This theory of the Army is said to be the reason for the failure to approve drinking water coolers for Army camps and installations. See article on page 22 of the Sept. 13 issue of AIR CONDITIONING & REFRIGERATION NEWS.)

MEN SHOULD DRINK ALL THEY WANT

"When a man's thirsty he should drink as much water as he wants—for that's what he needs," would sum up the conclusion of a group of scientists who spent several weeks conducting intensive research into the water habits and needs of men stationed in the desert climate of this area.

The more active a man is and the hotter the conditions in which he works the more water he needs, it was found by the party of scientists made up of Dr. Edward F. Adolph and six associates from the University of Rochester.

In measuring the amounts of sweat lost from a man by his loss of body weight it was found that a man who stops drinking water sweats about as fast as one who continues to drink what he wants.

For a short time the non-drinker can use some of his body water to make sweat without too much ill effect. Thereafter, however, he becomes exhausted if any more water is withdrawn from his body, it was discovered.

LACK OF WATER MAKES MEN EXHAUSTED

Furthermore, Dr. Adolph and his associates found, the man to feel comfortable again would eventually have to drink as much water as he would have done to quench his thirst normally.

"All the evidence known at present shows that a man cannot do without water, neither can he be trained to get along with less water," the scientists declared.

Most of the men who were "getting along" on a "gallon a day" or less were deceiving themselves, the researchers discovered. They were drinking pop at the Post Exchange, or were resting and sleeping more than usual, or working in the cool of the night.

"The man who works in the sun needs 2 or 3 gallons in 24 hours in summer, and by no known method can continuously get along on less," Dr. Adolph declared.

"Water requirements of an individual depends on his activity and on the daily temperature," Dr. Adolph said. "Measurements that we took showed that on days with top temperatures of 95° F. a man must drink at least 3 quarts of fluid each day, and a man who works hard in the sun under such conditions requires as much as 7 quarts.

"On days when the temperature reaches 110° F. even the most inactive man—unless he be in an air conditioned building—must have 6 quarts of fluid to drink, and those doing strenuous work in the sun requires 10 to 12 quarts per day."

Cold Drinks & Ice Are Missed Most By Men Overseas

TEMPLE, Tex.—"Cold drinks, ice, and laundry service" were the things most missed overseas, according to an Army nurse who recently returned here on sick leave after an active tour of duty with the Army Nurses Corps in North Africa.

Ducts Pre-painted for Candy Plant System

WILKES-BARRIE, Pa.—To prevent the possibility of paint odor's being absorbed by candy, galvanized sheet metal ductwork for the air conditioning system was enameled white before assembly when two Carrier cooling systems were installed in the Helen K. Salsburg Candies plant here.

One system supplies conditioned air to the cooling tunnel where chocolate coating is hardened on the centers. Equipment is located above the tunnel and blows air down under the belt at the inlet end of the tunnel in order to set quickly the bottom of the chocolate.

At the delivery end of the tunnel, a booster fan pulls the air from under the belt and delivers it over the belt and chocolates.

From the tunnel candy goes to a packaging and storage room where temperature is held constant at 62° and relative humidity at from 50 to 60% by the other system.

Clarence Rogler Named Manager of Larson, Milwaukee Jobber

MILWAUKEE—Clarence H. Rogler, formerly connected with the Le Roi Co. here, has been appointed general manager of Gustave A. Larson Co., local refrigeration and air conditioning parts jobber, announces Gustave A. Larson, president.

Mr. Rogler has a background of 25 years' experience in Wisconsin business circles. Prior to his connection with the Le Roi firm he was priorities coordinator, and credit and collection manager for the Massey-Harris Co. at Racine, Wis. He is past president of the shoe group of Milwaukee Association of Credit Men, and chairman of the speakers committee.

"Due to the tremendous increase in our business over previous years, we have found it necessary to secure the services of a trained executive," Mr. Larson said.

WATER COOLERS

for

Drinking Water
Film Processing
X-Ray
Bakery Service
Jacket Cooling
Shipboard (*Special Models*)
Scuttle Butt

•

Also Cooling Tanks for Penicillin Solution

•

Forty years of experience in building special cooling equipment. Send us your problems.

Filtrine
MANUFACTURING COMPANY
53 Lexington Ave., Brooklyn, N.Y.

PENN ADVERTISES TO SUPPORT THE INDUSTRY

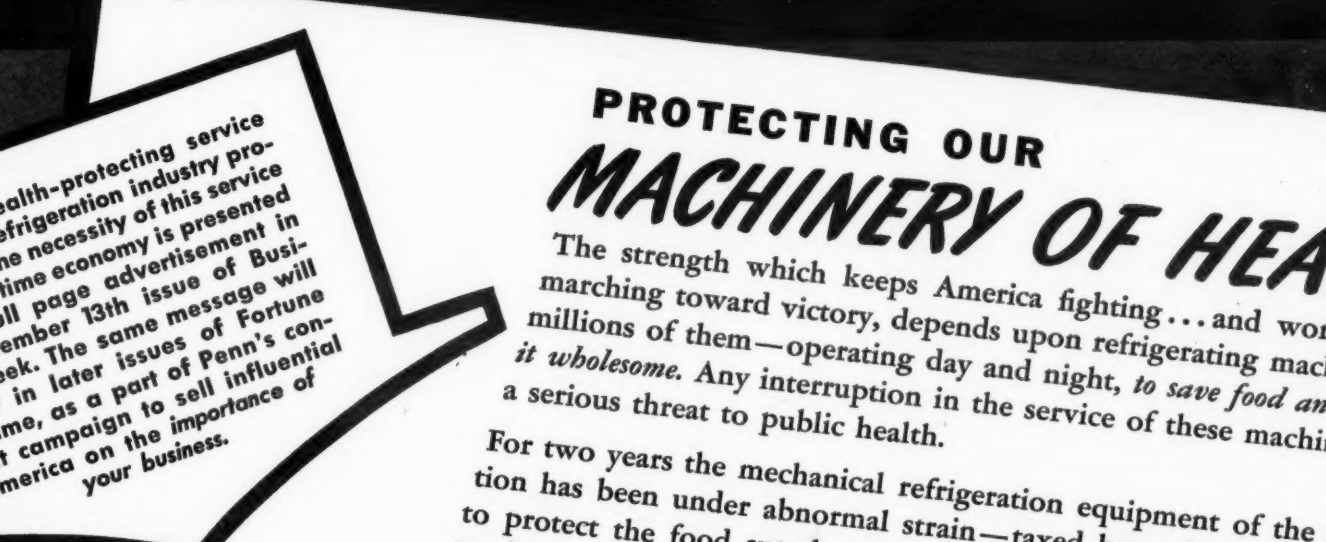
The vital, health-protecting service which the refrigeration industry provides and the necessity of this service in our wartime economy is presented in this full page advertisement in the September 13th issue of Business Week. The same message will appear in later issues of Fortune and Time, as a part of Penn's consistent campaign to sell influential America on the *importance of* your business.

PROTECTING OUR
MACHINERY OF HEALTH

The strength which keeps America fighting...and working... marching toward victory, depends upon refrigerating machines—millions of them—operating day and night, *to save food and keep it wholesome.* Any interruption in the service of these machines is a serious threat to public health.

For two years the mechanical refrigeration equipment of the nation has been under abnormal strain—taxed beyond its capacity to protect the food supply of civilians and fighters alike. With production of replacement units drastically limited by war necessity...with a *growing shortage of refrigeration servicemen,* the industry is waging a valiant fight to keep existing machines in operation. But, the situation is becoming more critical...the co-operation of the public, business and government is urgently needed.

As a manufacturer of automatic controls for commercial refrigeration machines, Penn is helping in that fight. We are striving



to sustain the morale of dealers and servicemen—*the technically trained men who know how to keep the machines in operation. Their specialized knowledge and skill are essential to the nation's health and to the war effort!* We are encouraging the salvage of every usable part...repairing controls when possible and—under the established priority rules—supplying new controls to keep machines in service. *Penn Electric Switch Co., Goshen, Indiana.*

PENN
A Star . . . for continued Excellence in Production
AUTOMATIC CONTROLS
FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

Air Conditioning & REFRIGERATION NEWS

Established 1926 and registered as Electric Refrigeration News

F. M. COCKRELL, *Founder*

Published Every Monday by
BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.
Telephone Columbia 4242

Subscription Rates
U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: $4.00 per year; 2 years for $7.00. All other foreign countries: $6.00 per year. Single copy price, 20 cents. Ten or more copies, 15 cents each; 50 or more copies, 10 cents each. Send remittance with order.

GEORGE F. TAUBENECK,
Editor and Publisher

PHIL B. REDEKER, *Managing Editor*
Editorial Assistants: ROSS H. POTTER, C. DALE MERICLE, ELISE WHITE, AND HELEN DAVIS

JAMES B. SMITH, *Advertising Mgr.*
ELIZABETH SMITH, *Assistant Bus. Mgr.*
MARGARET MARR, *Assistant Adv. Mgr.*
HELEN C. HENDERSON, *Credit Manager*
RUTH RICHARDSON, *Subscription Mgr.*

On leave of absence to serve our country
U. S. Army: RICHARD A. NEUMANN, JACK SWEET, GEORGE L. COLLINS, GEORGE M. HANNING AND HUGH T. MAHAR
U. S. Navy: ROBERT P. NIXON, ED HENDERSON, JOHN R. ADAMS.
U. S. Marine Corps: PAUL R. PARK.
U. S. Army Air Forces: JIM MCCALLUM AND GEORGE WATKINS

Member, Audit Bureau of Circulations
Member, Associated Business Papers

VOLUME 40, NO. 6, SERIAL NO. 760
OCTOBER 11, 1943
Copyright, 1943, Business News Publishing Co.

Sound Reasons For Optimism

THIS INDUSTRY is one which has seldom worried about the postwar picture. Nearly everyone has agreed that the pent-up demand for household refrigeration will provide a tremendous market for many years to come, that commercial refrigeration is bound to do very well, that industrial refrigeration will continue to profit by many new uses, and that air conditioning is just at the threshold of emerging into the great business which it long promised to become.

Nevertheless, there have been plenty of "general factors" which have caused executives to keep their fingers crossed. In the main, these general factors have had to do with the political situation, and with the war.

WAR IS WELL ON ITS WAY TO SUCCESSFUL CONCLUSION

Well, nobody can deny that the war is well on its way to successful conclusion. Our situation is immeasureably better. In fact, it is now "snowballing." We are gradually drawing a ring around Japan. We are rapidly tightening the ring around Germany. As as yet, we haven't even begun to use the great American Army and Navy in force. Tremendous progress is just ahead.

And as for the political front, it is almost unbelievably encouraging. The appointment of Stettinius as the actual operating head of the State Department, the further elevation of Leo Crowley, the emergence of conservative advisers, and the new mood of deference to Congress seem to have put the New Deal on the shelf.

Roosevelt is undoubtedly the most sensitive politician of our times. These moves indicate that he has tested the direction of the wind; and that that wind is blowing in the direction of private enterprise, capitalism, and sound business practices.

The swing is remarkable. It began slowly, last January, with the new spirit of independence in Congress. Like the war against Japan, it inched forward almost invisibly until now it, too, has what seems to be irresistible momentum.

One of the objectives of the praiseworthy Committee for Economic Development has been to insure a "favorable climate" for business. It now begins to appear as if that "favorable climate" is moving back over the American area for the first time in a decade.

SAVINGS OF FAMILIES WILL COUNTERBALANCE DEBT

There remains one big worry. That is our astronomical debt. But even this won't be so gargantuan as we had feared, if the war continues to progress toward victory so rapidly.

And counterbalancing the debt will be the tremendous wiping off of private debt, as well as state and municipal debt. Families will emerge with more savings than they have ever had before, or possibly even expected to have.

S. Morris Livingston of the Department of Commerce believes that these savings will be such that in the future the average consumer "will be willing to save less and spend more out of his postwar income." This would expand employment and increase production to a point where consumers could absorb greatly increased production without digging far into their present savings.

It all looks very good for business.

Most important of all these optimistic factors is the return of a "favorable climate" for private enterprise. And that "favorable climate" is returning because public opinion demands it. That is the best news yet.

They'll Do It Every Time

By Jimmy Hatlo

THANKS FOR A VERY NICE RIDE, JEEVES --HEH, HEH-- YOU MAY HAVE THE CAR FOR THE REST OF THE DAY... HEH-HEH... I'M GOING TO TELL ALL MY FRIENDS TO GIVE YOU THEIR ELEVATOR BUSINESS- HEH-HEH...
DON'T THAT PEST EVER QUIT PULLING CORNY GAGS? NOW HE'LL PARK HERE FOR AN HOUR AND DRIVE MY CUSTOMERS AWAY.
HE'S SHOWING OFF IN FRONT OF THE LITTLE BLONDE... NOT THAT HE NEEDS ANY INCENTIVE--THAT WOULD-BE HAM WOULD PERFORM ALONE IN A CLOSET...
SMOKE BUTTSIES
HE'S SUPPOSED TO WORK IN OUR OFFICE, BUT THE WORK HE DOES WOULDN'T KEEP A FLEA BUSY.
IF HE TELLS ME ONCE MORE THAT HE ALWAYS KNEW I'D CLICK... I'M GONNA CLIP HIM ONE...
CLICK CLICK
LISTENING TO THE SAME OLD ROUTINE OF THE OFFICE WIT WHO NEVER LETS UP
THANX TO AL HANNON, SHREVEPORT, LA
JIMMY HATLO
5-25
Copr 1943. King Features Syndicate, Inc. World rights reserved

LETTERS

SO YOU THINK IT'S PRETTY TOUGH HERE?

A.P.O. 680 c/o Postmaster
69th Q. M. Refri. Co.
New York, N. Y.

Dear Editor:

Today receiving the paper only four months on its way, I believe readers may like to hear from a few of the refrigeration men overseas. Myself being somewhere in Iran would like to tell service men and service companies that they have no shortage at all comparing to our grief overseas.

I know that there are very few men who would undertake jobs that we are doing here every day; or even go out on jobs that we do with the tools we have.

I would like to ask the installation men a question: Would you and can you go out and put in a 60-ton cold storage box with a hammer, screw driver, two worn out pipe wrenches, and a set of pipe dies that cuts very poor threads? It can be done for the Army refrigeration men are doing it every day. We have found out more uses for a hammer and screw driver than you can imagine. The hammer acts the purpose of a flaring tool, and a rough rock a file.

Having received letters from fellow journeymen from back in the states and laughed about them complaining about the shortage of tools and parts, I hope this letter will inspire service men to go out on jobs and show more initiative in their work.

I would like to hear from any refrigeration men or refrigeration engineers and if they have any bulletins out on refrigeration equipment from the past year and care to mail it to me I will appreciate it highly.

RALPH P. BABCOCK (T/Sgt.)

BRITISH FIRM WELCOMES POSTWAR PLANNING

Crowther & Shaw Limited
Cloth Hall, Corner
Huddersfield
Yorkshire, England

Editor:

We have, as you will be aware, been subscribers to, and readers of, for the past six months of your Refrigeration publications and the digesting of your periodicals has indeed given us very great pleasure as well as providing us with more than useful trade information.

From what we can see of your American Refrigeration set-ups we have a lot to learn in the vital business of food storage and preservation but we can assure all your current advertisers that their advertisements in your journal as well as your manifold wartime difficulties are carefully read and widely studied on this side by people like ourselves.

Our wartime problem are as difficult to us as yours are but we are more concerned with postwar problems and how they will effect us.

Our own particular firm were amongst the first dozen firms who started handling Refrigerators in England many, many years ago and we have had a great experience in both the commercial and household lines.

We are open to discuss postwar business with any U. S. Refrigerator manufacturer if they will get in touch with us and the writer is prepared to visit the States to interview principals who are prepared to go wholeheartedly for what we consider very good business.

In the meantime let us lick Hitler and Tojo; Mussolini is now a deflated mutt.

A. DOUGLAS, Director

BALTIMORE NEWSPAPER DID MISQUOTE HOTTEL ON SUBJECT OF REFRIGERANT CHANGEOVERS

Carrier Air Conditioning Division
of
United Clay & Supply Corp.
1122 N. Charles St.,
Baltimore, Md.

Editor:

In your issue of Aug. 30, 1943—AIR CONDITIONING & REFRIGERATION NEWS—where your article refers to the "willy-nilly change-overs from Freon to methyl," I was glad to notice that the editorial read "misquoted," when referring to the article that appeared in the *Evening Sun*. I am enclosing a copy of the letter that I wrote to the Editor of the *Sun* papers after my surprise of seeing the article, using my name as quoting statements that I certainly would not be foolish enough to mention, particularly to a newspaper reporter.

In the old days before we had Freon, I myself had enough methyl to make me sick as a dog, and I would be the last one to minimize the hazards of its careless use, to say nothing of the fire hazard and erratic operation as a result of the mixture with Freon.

This substitution is serious business, and requires careful study before considering the change-over, especially for air conditioning applications, which we do not recommend at all to the public.

We greatly appreciate your attitude, in that you are also concerned about the serious after effects that could result from irresponsible people misusing methyl at this time.

You will note in my letter to the *Sun* that I referred them to your publication and sent them a copy of your article on methyl substitution for Freon. They called me offering to make a correction of same and I referred them to this article.

Thanking you for your cooperation in correcting this wrong impression.

CLARENCE W. HOTTEL

HOTTEL'S LETTER TO 'SUN'

Carrier Air Conditioning Division
of
United Clay & Supply Corp.
1122 N. Charles St.
Baltimore, Md.

The Evening Sun Papers
Baltimore, Maryland
Attention: The Editor
Gentlemen:

A Mr. Harris, reporter, in disguise, called us the other day and asked about the shortage of Freon, without indicating that he was a reporter and to our surprise we noted an article in the Wednesday evening paper the next day. He quoted me as saying that methyl chloride is not corrosive, and also mentioned me as making statements which I did not. Mr. Harris has gotten this subject pretty badly mixed up.

From his conversation I thought he was only pertaining to your air conditioning system repairs, and not as a matter of publicity. This has caused me considerable embarrassment and many unnecessary calls and explanations which may become serious due to our city code conditions and restrictions, as well as our industry's approved standard practice.

We are enclosing a publication which is the exact story that I gave Mr. Harris over the telephone, and we ask that you use this article to correct the impression that was made in the paper last Wednesday.

CLARENCE W. HOTTEL

'HOUSEHOLD MANUAL MOST CLEAR AND CONCISE'

1848 W. 64th St.
Chicago, Ill.

Editor:

Please mail me a catalog of your book on Refrigeration and Air Conditioning as I am a student and find your book on household refrigeration one of the most clear and concise books on the subject that I have ever read. Hoping you have something on air conditioning that will compete with it.

James L. Nichols

Worthington Votes To Pay Arrears Due On Preferred Stock

NEW YORK CITY—Aiming to resume dividends on common shares, directors of Worthington Pump & Machinery Corp. voted recently to wipe out all arrears prior to the current quarter on the two classes of preferred stock, company spokesmen report.

Declaration of a dividend of $33.25 a share against accumulations on the class A preferred and one of $28.50 a share on accumulations on the class B preferred, both payable Oct. 1, leaves a balance owed on the two classes of $1.75 on the A and $1.50 a share on the B for the current quarter, it is stated.

Payment of these dividends brings total disbursements this year to $78.75 a share on the A preferred while class B preferred holders will have received a total of $67.50 a share this year.

Resumption of dividends on the common stock cannot be determined immediately, even though earnings of the company have been running higher than last year. Worthington's net income for the first six months of 1943 was reported at $1,814,887, or $5.47 a common share compared with $1,388,877 or $3.95 a common share for the same period last year. Sales billed by the company for the first six months of 1943 amounted to $75,000,000 contrasting to $41,000,000 billings in the first half of 1942.

M-H Begins National Radio Program

MINNEAPOLIS—The Minneapolis-Honeywell Regulator Co. has announced it will start a campaign on the full United States CBS network beginning Oct. 10.

This marks the client's first CBS campaign in a number of years. Its first advertising on the Columbia network was in September, 1930.

The program will be heard Sunday mornings from 11:05 to 11:30 EWT, and will originate from the Great Lakes Naval Training Station.

The Great Lakes Blue Jacket Choir will be featured with Danny O'Neil, popular singer, and the title of the program is "Blue Jacket Choir with Danny O'Neil."

Commercials on the program will be institutional. Agency handling the account is Addison Lewis & Associates, Minneapolis.

HERE IT IS!

AIRO'S NEW 1943 VICTORY CATALOG

AIRO's new Wholesale Catalog is completely revised from cover to cover. Each page chock-full of quality merchandise priced economically — and each item available. Get your supply of refrigeration parts, tools and supplies from this Up-to-the-Minute Catalog.

The supply of these catalogs is limited, so if you haven't requested your copy yet, DO IT TODAY! Simply write us a note on your letterhead.

AIRO SUPPLY CO.

2732 N. Ashland Ave., Dept. B, Chicago, 14, Ill.
WHOLESALE DISTRIBUTORS
Refrigeration Parts and Equipment

Bowen Named Manager Of Penn In Atlanta

JUDSON P. BOWEN

Recently named manager of Penn Electric Switch Co.'s Atlanta Branch office, he has had wide experience in the refrigeration and air conditioning field.

Self-Selective Selling Here to Stay, Dept. Store Head Says

NEW YORK CITY—Self-selection of merchandise is here to stay, destined to increase in popularity after the war in spite of the system having been retarded through misconceptions concerning this type of retailing, H. E. Glave, superintendent of Thalhimer Brothers, Richmond, Va., announced recently at a meeting of the American Marketing Assn. retail division held here recently.

"I believe that self-selection can be applied to all types of stores and practically all types of merchandise," Mr. Glave declared, citing the successful self-service operations instituted in the Thalhimer store, where displays are so arranged that all items of merchandise are visible and within reach of customers. He stated that most stores could add 15 percent to their effective selling price without an increase in overhead.

"A great many merchants became excited about self-service and cooled off just as quickly because management did not take the time or responsibility to analyze it and what it could accomplish," Mr. Glave said. "Unfortunately, the thinking of many retailers with regard to this form of selling was misdirected. Most merchants associated it with supermarket grocery stores, chain stores, and 5 and 10 cent stores.

"It is true that the chain stores were the father of this idea, but they developed it because of necessity and their need for low operating costs.

"However, so far as department stores and specialty shops are concerned, the real purpose of self-service can be summed up as 'accessibility of merchandise' — accessible both to the customer and the sales person."

Carrier Stockholders to Vote On 'Security' Plan

SYRACUSE, N. Y.—Carrier Corp. stockholders will vote on a proposed "security" plan for employes Oct. 20, it is reported, which will affect 1,200 Carrier workers at this time if approved.

The program, which includes retirement income, death benefits, and separation allowances based on length of service, will be administered under a trust agreement by three trustees to be appointed by the board, the report states.

Promise 'Freon' Plant Feb. 1

WILMINGTON, Del. — Work has begun on the new plant addition which will make possible a 55 percent increase in the productive capacity for "Freon-12" fluorine refrigerant, Kinetic Chemicals, Inc. announces.

Construction of the addition, authorized by the War Production Board, will be at Carney's Point, N. J., and the new capacity is scheduled to be ready by Feb. 1, 1944.

Barbosa Organizes Service Firm In Gary, Ind.

GARY, Ind.—Process refrigeration in various war industries here comprises most of the work handled by a new refrigeration service firm organized by Al Barbosa, formerly associated with General Electric Co. here in connection with air conditioning and automatic heating.

Known as Master Air Conditioning & Refrigeration Co., the new firm is located at 1005 West 5th Ave. A complete stock of repair parts for refrigeration equipment is maintained, permitting the company to handle service and installation work on all makes.

Mr. Barbosa, who has had several years' experience in refrigeration and air conditioning installation and service, is assisted by Peter Kobe, in charge of the shop. Mr. Kobe has a broad experience in repair work.

U. S. Justice Department Describes Help Given to Small Business Concerns

WASHINGTON, D. C.—Ways in which the small businessman has been helped by the Small Business Section of the U. S. Department of Justice are cited in a review of the first two years' operations of this branch made public by Assistant Attorney General Wendell Berge, chief of the Antitrust Division.

While the section has no power to place procurement contracts or to finance any business concern, it has been helpful to hundreds of small business concerns in their efforts to secure government contracts and financing through close cooperation with the Smaller War Plants Corp. and Smaller War Plants sections of the Army, Navy, and Maritime Commission, Mr. Berge averred.

In one instance a small manufacturer of optical goods was prevented from bidding on government business because the specifications had been written around the individual patented product of a large concern. At the request of the small business man, Department of Justice officials studied the case and consulted with the procurement officer concerned with the result that the specifications were completely rewritten.

"As a further example," Mr. Berge said, "a small Wisconsin manufacturer found himself caught in a squeeze between a high ceiling for his raw materials and a low ceiling for his finished product. After investigation by the Section, the matter was presented to the proper agency, which immediately reviewed the ceilings and adjusted them so that the manufacturer could continue in business."

A small manufacturer in the Middle West who was making an important food product for lend-lease and the government found it impossible to obtain priorities to purchase a new boiler after one of the two in his plant had been condemned and shut down by inspectors. An appeal to the Small Business Section brought an investigation that led to prompt granting of the necessary priority.

Under the supervision of Chalmers Hamill, the Small Business Section of the Antitrust Division maintains representatives in the division's 14 field offices.

3 Given Promotions By Tuthill Pump

CHICAGO—H. T. Kessler, formerly vice president, has been named executive vice president and general manager of Tuthill Pump Co. here; W. D. Caldwell, controller, becomes assistant treasurer while retaining the duties of controller; and Jess Tharp has been named works manager, according to an announcement by G. B. Tuthill, president and treasurer.

Harris Armstrong, A.I.A., has studied at Washington University and Ohio State, worked under the late Raymond Hood. From his St. Louis office during the past ten years have come many notable residences and doctors' buildings. For many of these he has also designed furniture.

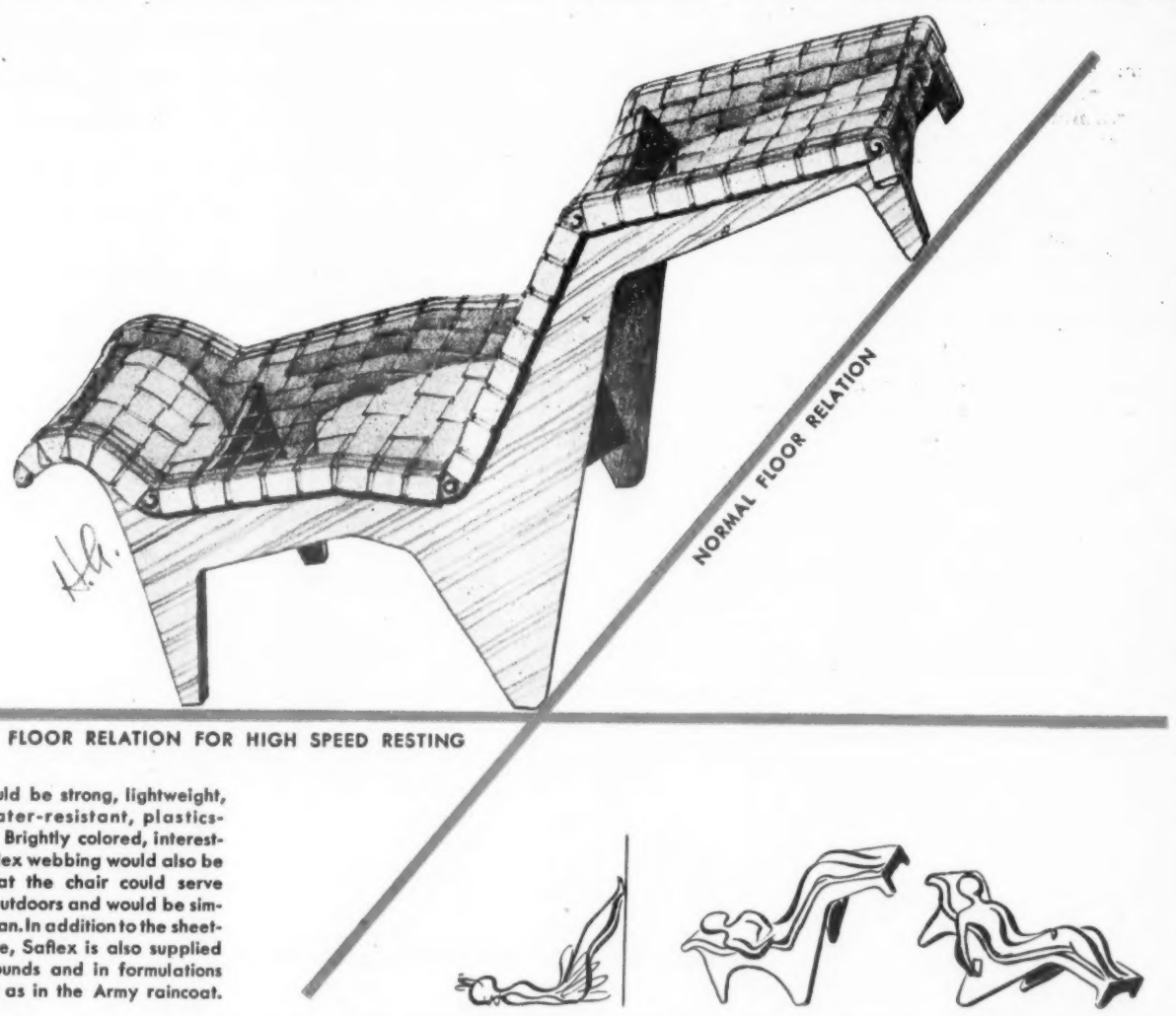
FROM THE ARMY'S NEW RAINCOAT . . . A HIGH SPEED RESTING MACHINE!

ST. LOUIS Architect Harris Armstrong may have had his tongue in his cheek when he named the chair he has sketched below — but he was on sound ground when he designed it to take advantage of a physiological fact long recognized by athletes and ballet dancers: *i.e.*, the human machine relaxes more easily and completely with feet perched higher than the head.

One of the most interesting features of Mr. Armstrong's design is its effective use of Saflex, a material which epitomizes the great versatility of modern plastics and the great strides they have made in answer to wartime needs.

For example, in the Army raincoat Mr. Armstrong is examining in the photograph, Saflex now replaces rubber with marked success, yet the first Saflex compounds were developed to serve as thermoplastic binders for high test safety glass. To fit Saflex for its new job, it was transformed almost overnight from a thermoplastic into a thermosetting material that qualifies as the most rubber-like of all plastics.

In its new formulations, Saflex can be vulcanized and otherwise handled almost exactly like rubber. It can be given a variety of interesting textures and any color, even clear transparent. Particularly it is resilient without actually being elastic—a quality which led Mr. Armstrong to specify webbing woven from board strips of Saflex for his ultra-comfortable chair.



Chair's frame would be strong, lightweight, weather and water-resistant, plastics-bonded plywood. Brightly colored, interestingly textured Saflex webbing would also be waterproof so that the chair could serve equally well in or outdoors and would be simple and easy to clean. In addition to the sheet-form specified here, Saflex is also supplied as molding compounds and in formulations for coating fabric as in the Army raincoat.

The Broad and Versatile Family of Monsanto Plastics

(Trade names designate Monsanto's exclusive formulations of these basic plastic materials)

LUSTRON (polystyrene) • SAFLEX (vinyl acetal) • NITRON (cellulose nitrate) • FIBESTOS (cellulose acetate) • OPALON (cast phenolic resin) RESINOX (phenolic compounds)

Sheets • Rods • Tubes • Molding Compounds • Castings • Vuepak Rigid Transparent Packaging Materials

MONSANTO PLASTICS
SERVING INDUSTRY...WHICH SERVES MANKIND

FACTS FOR POSTWAR PLANNERS

Saflex and the Resinox or melamine bonding resins which might be used in the plywood frame of Mr. Armstrong's chair are just part of the large Family of Monsanto Plastics, probably the broadest and most versatile group of modern plastics offered by any one manufacturer.

For facts on the entire family—and an overall picture of what plastics are, how they are fabricated and what they promise in the future — see the 24-page guide to Monsanto Plastics recently prepared for product designers. Simply write: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts.

POLARTRON

PRESSURE AND TEMPERATURE CONTROLS

Extra features equivalent to 32 or more *Special* models are STANDARD in every M-H Polartron.

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Refrigeration Controls and Control Systems

Foes of Trade Diversion Ask For Planning Now To Avoid Evils In The Postwar Era

Manufacturers Requested To Sell Only To Those Who Meet Definition of a 'Retailer'

NEW YORK CITY—Diversion of trade from regular channels of distribution looms as a billion-dollar threat to the postwar retailer, warns Arthur L. Garniss, executive director of the New York Council on Trade Diversion, Inc.

Of major importance will be the disposition of huge stocks of government-owned merchandise when the war ends, Mr. Garniss stated, adding that unless orderly distribution of these stocks is established, "chaos may result in distribution."

Trade diversion includes the competition of manufacturers and wholesalers with retailers in consumer goods sales, "discount houses," courtesy cards" to employes, company stores, etc., all of which are given close scrutiny in Mr. Garniss' survey.

Asserting that the methods used in trade diversion are almost always deceptive to the consumer, unfair to the established retailer, damaging to the reputation of the manufacturer and generally unsound economically, Mr. Garniss said this problem cannot be overlooked in postwar planning by the many elements of the economy which are affected.

6 Types of Trade Diversion

He outlined six types of trade diversion as follows:

1. The manufacturer or wholesaler who knowingly misuses his legitimate function to compete in consumer sales with the retail store.

2. The manufacturer who sells his products to another employer for resale to that employer's employes.

3. The manufacturer or other employer who sells to his employes products other than his own, except safety devices.

4. The manufacturer or other employer who operates a company store, except where normal outside facilities are not available.

5. The manufacturer or other employer who subsidizes, directly or indirectly, retail store facilities conducted on his premises by his employes.

6. The manufacturer or other employer who permits distribution among his employes of solicitation material, regardless of source, but particularly from those vendors who claim to be "wholesalers," "distributors," "manufacturers," or "discount specialists," or who offer special inducements such as "courtesy cards," and who otherwise influences the buying habits of his employes.

Affects Employment, Too

"The vital importance of the trade diversion problem," Mr. Garniss said, "is measurable only by the importance to the nation of a sound, healthy retail distribution system. While the estimated billion-dollar annual diversion is important in itself, sound thinkers among manufacturers, bankers, publishers, insurance, and real estate men will recognize that the damage such loss of volume can do to an industry cannot be measured alone by the actual paper figure. Efficiencies in operation, prevention of failures, improvement of properties, increases in wage rates, and many other gains are made impossible by the diversion of this tremendous volume of business.

"If on the basis of retail estimates it requires one employe for each $7,000 in sales volume, this billion-dollar volume channeled through retail outlets would employ about 143,000 people," Mr. Garniss explained. "As it has been estimated that to distribute this billion-dollar volume through these unsound and unsatisfactory methods requires about one-tenth this number of people, the net loss in employment is tremendous.

"Because of this loss to retailing, many other parts of our economy are greatly affected. For example, retailing spends about 4% of gross sales in newspaper and other printed advertising. At this rate, a billion dollars in lost retail volume means a substantial loss to the advertising industry, as very little advertising is associated with diversion practices.

"Real estate and real property taxes are direct losers as a result of trade diversion," added Mr. Garniss. "This billion-dollar volume brought back to established retail distribution could mean greatly increased real estate occupancy. Furthermore, a considerable loss is sustained by Federal, state, and local governments through the common avoidance of tax payments associated with these practices."

Whether or not this billion-dollar trade diversion will come to pass depends, says Mr. Garniss, chiefly on the manufacturer and retailer. He wonders if the manufacturers will establish "sound, long-range sales plans and policies" and "carefully select their outlets according to a pre-determined standard and then protect them against unfair trade practices," or if the manufacturers will attempt to open every retail account possible at once "based mainly on the ability to pay, but otherwise not representative of the function of retailing."

Some Suggested Cures

He also questions whether the cure lies in more legislation or in sound planning by manufacturers and retailers now. If the latter method is the answer, Mr. Garniss suggests that conferences be started now to consider:

1. Voluntary commitments by established retailers to clean their houses.

2. Restoration by consumer goods manufacturers of sound sales policies predicated on distributing their products through "retailers performing necessary services."

3. Voluntary decision by manufacturers to cease those unlimited forms of buying or selling.

4. Recognition by manufacturers of the obligation of enforcement when and if they place their merchandise under fair trade contracts.

The definition of a retailer as used by Mr. Garniss is one generally agreed upon, he says, by manufacturers who have maintained high standards in their representation: "A retailer, regardless of his size or type, is one who carries representative stocks for the convenience of the public, truthfully represents his merchandise in his advertising and at the point of sale, renders necessary services, maintains a payroll, pays rent or taxes, respects laws, and observes the principles of fair competition.

Restriction on Copper For Auto Parts Eased

WASHINGTON, D. C.—Restrictions on the use of copper and copper-base alloy in the manufacture of certain automotive parts have been eased by an amendment to order L-106, the War Production Board announced recently.

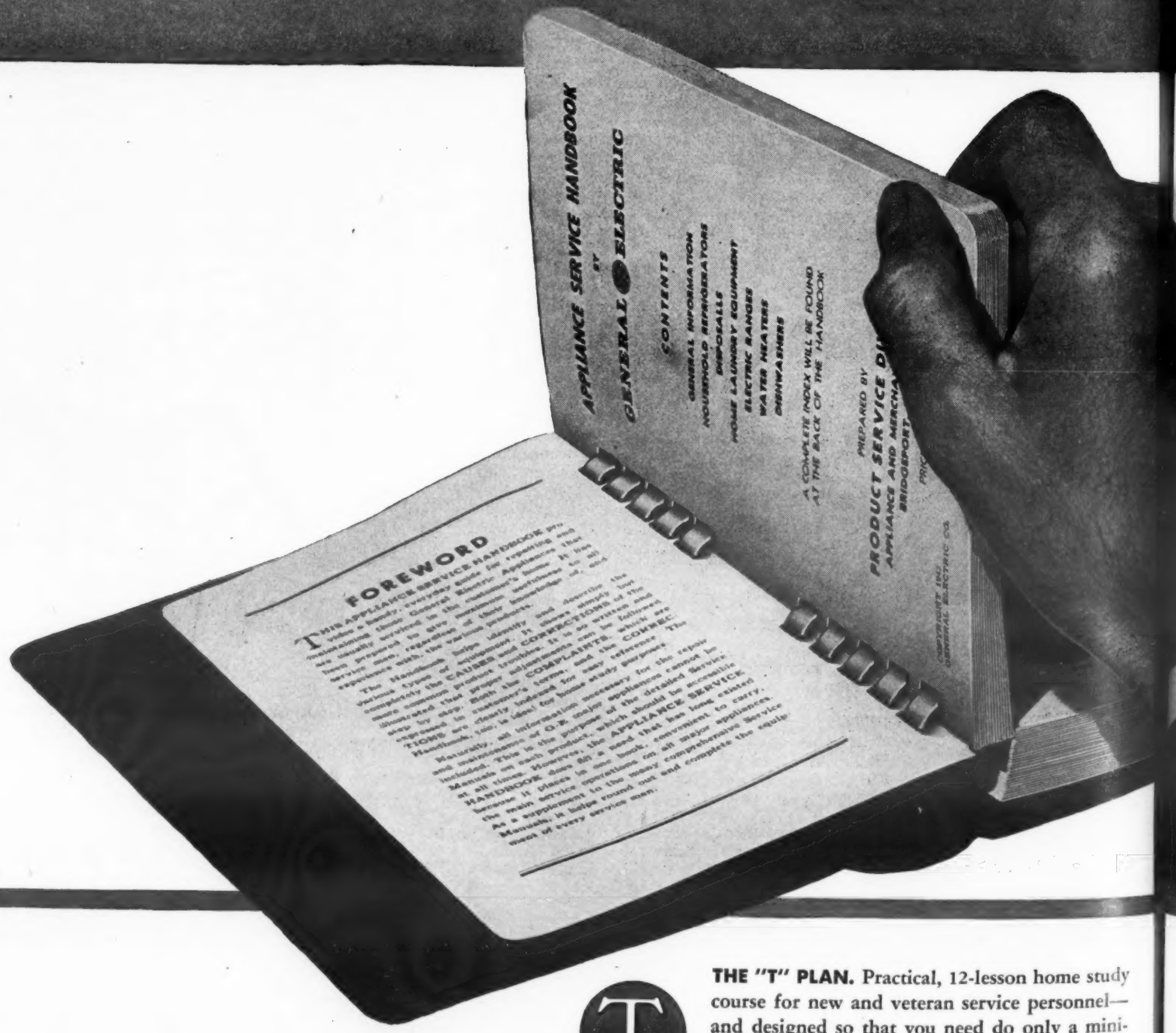
Thermostats and pressure type radiator sealing caps can now be made entirely of copper base alloy, whereas previous to the new ruling only the seat and valve of these parts could be made of copper base alloys.

Also permitted are shut off cocks and drain cocks, caps and valves for safety type auxiliary fuel tanks. Tube fittings for hydraulic systems, oil lines and fuel lines are likewise added to the list provided these items are machined from castings of specified content, forgings or irregular section extruded brass rod, if such methods were used by the producer before May 6, 1942.

Built So Well

1927 1928 1929 1930 1931 1932 1933 1934

...The Service Story Can Be



ARE YOU TAKING ADVANTAGE OF ALL THESE G-E WARTIME SERVICE HELPS FOR DEALERS?

THE "T" PLAN. Practical, 12-lesson home study course for new and veteran service personnel—and designed so that you need do only a minimum of paper work. Enroll with your G-E Distributor at once.

G-E SERVICE TRAINING SCHOOLS—conducted in the field—the year round. Already attended by thousands from coast-to-coast. More planned for the future.

Complaints of Stove Firms on Lack of Materials Spur WPB Investigation

WASHINGTON, D. C.—Telegrams have been sent by the War Production Board to a large number of manufacturers of cooking and heating stoves asking them to specify existing obstacles to fulfillment of the production program covering such stoves, according to the Office of Civilian Requirements.

A meeting was held between WPB officials and trustees of the Institute of Cooking and Heating Appliance Manufacturers who requested the conference in order to present their view of the production picture for cooking and heating stoves as it now stands. Following disclosure at the meeting that several barriers stand in the way of fulfillment of the program—such as inability to procure raw materials, value shortages and inadequate labor supply—officials decided on the survey of production bottlenecks confronting the industry.

Vice Chairman Arthur D. Whiteside, head of the Office of Civilian Requirements, indicated at the meeting that if serious problems are found to exist, necessary steps will be taken by WPB to correct them and to expedite in so far as possible completion of the program to meet consumers' needs for cooking and heating stoves this winter.

An analysis was presented at the meeting by OCR officials comparing the average annual production of specific types of cooking and heating stoves during the period 1939 with the estimated annual output of such stoves based on the WPB programmed production for the last quarter of this year.

In addition, the analysis compared the average annual amount of steel consumed during the 1930-39 period with the steel which would be needed on an annual basis if the last quarter allocation for civilian type stoves were extended over a year's period.

It was emphasized that the estimated current annual production is based on fourth quarter allocations and should not be interpreted as the expected actual production during the next year, since it is not possible to say at this time whether the fourth quarter steel allocation for stoves will continue at the present rate for the subsequent three quarters.

Kalamazoo Stove Names Price Vice President

KALAMAZOO, Mich.—Herman C. Price, formerly in charge of Sears, Roebuck & Co.'s major appliance division, has been named vice president of Kalamazoo Stove & Furnace Co.

Limitation Order L-79 on Plumbing And Heating Interpreted by WPB

WASHINGTON, D. C. — General Limitation Order L-79, as amended (Plumbing and Heating Equipment) has been given an official interpretation by the War Production Board in the form of questions and answers. The following are excerpts from the complete series which may be applicable to some persons in the refrigeration and air conditioning fields:

Are the following items included in the definitions of plumbing and heating equipment:

Q. Water softeners and filters, water systems, pumps for water systems?

A. Yes. They are part of a system designed for the supply of water. However, other War Production Board orders also affect the sale of this equipment and to the extent to which any other order is more restrictive, the more restrictive order governs.

Q. Stokers under 60 pounds per hour?

A. Yes. They are part of a system designed for producing heat.

Q. Electric water heaters?

A. No. Equipment using electricity as fuel is specifically exempt from the definition of plumbing equipment. It is subject to Order I-65. However, there are some items used interchangeably as components of electric and non-electric heaters, and these items, when sold separately, are subject to the order.

Q. Paragraph (c) (2) permits the sale without a rating of metal items or parts needed to install units of non-metallic plumbing or heating equipment as described in paragraph (c) (1). Does this mean that plumbing fixture fittings and trim are excepted from the restrictions of the order?

A. No. This exception relates only to items of joining hardware. The fittings and trim are component parts of plumbing equipment and are restricted under paragraph (b).

Q. If the manufacturer sells a faucet to a wholesaler for $4, the wholesaler sells it to the dealer for $5.05 and the dealer sells it to the consumer for $6, when is a preference rating required?

A. Delivery of the faucet from the manufacturer to the wholesaler without a rating is permissible under paragraph (c) (3) which permits the sale of an item costing the purchaser not more than $5. However, since the item costs the dealer and the consumer in excess of $5, a preference rating is necessary before sale to them can be made.

Q. Is it permissible under paragraph (b) to return merchandise to the factory without restrictions?

A. Yes, if the transaction is in effect a cancellation of the original purchase order.

Q. Paragraph (c) (7) exempts from the preference rating requirement equipment rationed by the Office of Price Administration. What items included in the definitions of L-79 are being rationed by OPA?

A. The equipment listed below is now being rationed by OPA:

Coal and wood heating stoves.
Oil heating stoves (including those using kerosene or gasoline as a fuel).
Gas heating stoves and heaters.
Coal and wood cooking stoves and ranges.
Oil cooking stoves and ranges (including those using kerosene or gasoline as a fuel).
Gas cooking stoves and ranges.
Combination ranges (except those using electricity as one of the fuels).
Bungalow ranges (except those using electricity as one of the fuels).
Coal or wood laundry stoves (except those having a built-in water jacket or coils).
Conversion burners (to convert coal or wood ranges to use of kerosene or oil).
Kitchen heater ranges.
Oil table stoves.

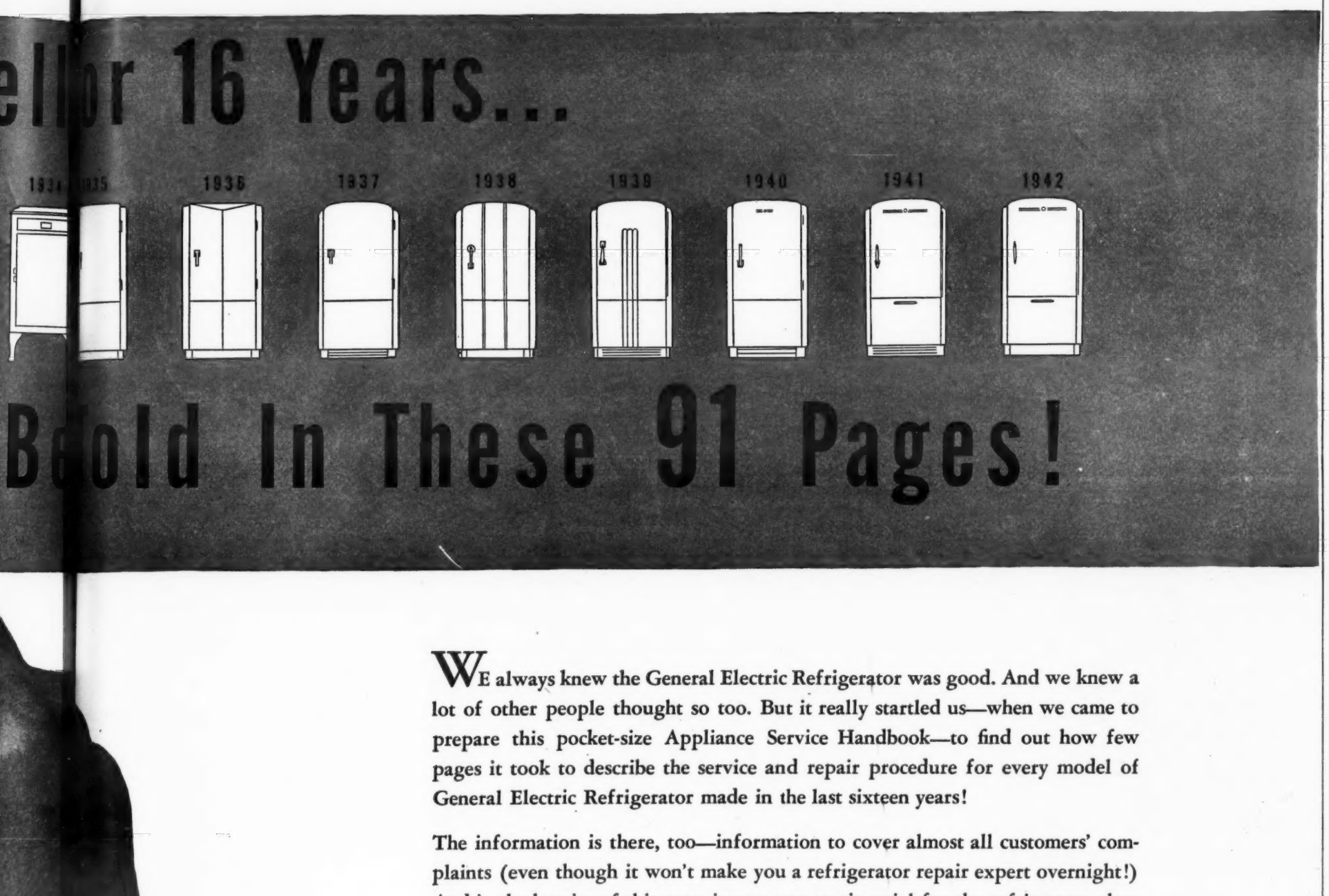
This list is subject to change. In the future, authoritative information should be obtained by consulting OPA Ration Regulation 9A or a local War Ration Board.

Tennessee Valley Firm Extends Preference Plan

NASHVILLE, Tenn.—The policy of giving preference to appliance distributors handling products now marketed by Tennessee Valley Associates, manufacturers of an extensive line of appliances now being developed for postwar distribution, has been extended to the makers of Economaster Electric Heaters, another Associates organization.

Before the war, the Associates' distributor-dealer organization handled such items as Moist-Aire air conditioners, Stakool fans, and Ventilaire fans and room coolers. Wartime production has been limited mainly to wooden articles.

Among the Associates' wartime products are Top Line home dehydrators, Moto-Home utility cabinets and wardrobes, Doormaster storage compartments, and such children's toys as Swing-A-Way, a self-propelled swing; Flying Tiger, a three-wheel airplane runabout.



We always knew the General Electric Refrigerator was good. And we knew a lot of other people thought so too. But it really startled us—when we came to prepare this pocket-size Appliance Service Handbook—to find out how few pages it took to describe the service and repair procedure for every model of General Electric Refrigerator made in the last sixteen years!

The information is there, too—information to cover almost all customers' complaints (even though it won't make you a refrigerator repair expert overnight!) And in the brevity of this story is a greater testimonial for the refrigerator than anybody could ever write. *The refrigerator itself is its own best testimonial.*

This handbook is one you ought to have. There's equally helpful servicing information in it about all the other major G-E Appliances, including Electric Ranges, Water Heaters, Dishwashers, Disposalls and Home Laundry Equipment. Its price to you is only 75c, postage prepaid. Order a copy from your G-E Appliance Distributor today. General Electric Company, Bridgeport, Conn.

SCRAP IS POWER

...Cooperate with your industry! Salvage all inoperative parts containing critical materials!...Put vitally-needed scrap back into the scrap TODAY!

"PRODUCT MAN." Famous monthly service magazine that includes the latest short-cuts and improvements in appliance repairs. Keeps you up-to-date . . . Only $1.50 a year from your distributor.

G-E APPLIANCE SERVICE CENTERS — established at strategical locations in order to facilitate parts supply and service to all branches of G-E distribution.

GENERAL ELECTRIC

Service Manpower Drained Off In N. Y. With Little Effort To Replace It

Industry Elements Don't Get Together On Program So Service Help Dwindles

NEW YORK CITY.—It was hot in New York City this past summer, with two of the most protracted hot spells on record. With a shortage of manpower, the refrigeration service concerns in the city more than had their hands full.

One service company reported that it was about 30 days behind on its calls at one time. Another was 300 calls behind. Said one proprietor:

"I picked up the telephone when I came in in the morning and talked all day—telling people why we couldn't handle their calls immediately."

A concern with a trunkline telephone switchboard was so jammed up with calls crying for assistance that its own service men working outside couldn't reach the office to relay or get necessary information—so a private line had to be installed for the firm's own men.

Commercial installations fared only a little better than household jobs. There are no records of the amount of food that spoiled because of the inability to get refrigeration service, but it must be well into the thousands of pounds because nearly every serviceman had a tale to tell of calls that came in every hour of the day and night, in which merchants pleaded for a serviceman to come repair a system and save a stock of food—but there just wasn't anyone to send.

The failure to handle domestic calls, says some New York refrigeration service proprietors, has tended to shake up some of the contractual type refrigeration service operations that have been peculiar to the metropolis. Many New Yorkers, particularly those in Manhattan, are "cliff dwellers," (apartment house tenants) and these apartment houses are operated by real estate firms or mortgage and trust companies who dished out contracts to service companies for blocks of these apartments.

Apartment Dwellers Angered

In normal times, the service contracting firms handled this work quickly and smoothly. When the rush came in the summer just past, the tenant raised the roof when they couldn't get service on their refrigerators, and the property management firms canceled some contracts. But when they tried to make deals with some other service firms they often found them uninterested.

Despite the fact that New York is not a boom war production area and there has been complaint by the city fathers that unemployment is still a problem, the refrigeration service trade, from the information available, can't get enough men to replace those who have been drafted or lured to other jobs, so that service manpower is at least 30% less than it was prior to the war.

Apparently little consideration has been given in New York City to the essential status of refrigeration servicemen, either by the selective service or the War Manpower Commission. Both the armed services and certain war industries have drained off men and given little hearing to any pleas from the employers of servicemen.

No Help From the U. S.

While Federal agencies in the metropolitan area have shown little interest in the problem, the municipal officials have exhibited some concern and knowledge over the effects of a breakdown in existing refrigeration facilities.

New York's Mayor Fiorello La Guardia has discussed the importance of properly maintaining refrigeration facilities in some of his public utterances. Fire department squads have made special efforts to keep refrigeration systems intact where fires have occurred in retail food stores. But all this doesn't help the serviceman.

What then, is being done about the problem of refrigeration service manpower and other problems of refrigeration service in the New York area?

In the first place, some of the largest factors in the metropolitan area have not yet joined in with any cooperative type of activity.

The Refrigeration and Air Conditioning Guild is representative of a fair share of the service contractors, but this organization does not embrace such firms as S. J. O'Brien, Inc., and Manhattan Refrigeration Co. which handle all of the service contract work for two of the largest manufacturing firms in the field.

Some of these larger concerns have apparently felt that they could handle their own problems, but they haven't been eminently successful at it, as far as could be learned.

Attempts to get deferment have been on an individual, hit-or-miss basis. No effort has been made to tell the whole story of refrigeration servicemens' essential status to any agency, or to file any "manning tables."

Training has also been hit-and-miss. Said one service operator:

"If I could get a man interested in trying to learn the trade I'd dicker with him to see what he would take for a salary while he was learning, and this figure ranged all the way from $20 to $35 a week. And I didn't get too many men that were worth much to me.

Women Just Didn't Stick

One of the larger firms took a fling at hiring women in the Spring.

"We trained eight of 'em but we haven't got one left," an official of the concern commented.

The New York public school system has very fine trades training courses in practically every trade except refrigeration. Consequently, the bulk of training refrigeration service men has fallen upon the Y.M.C.A. Trade and Technical School. But although these schools offer excellent instruction, they hardly funnel enough men into the trade. Lyonel Berken, Chief Instructor of the Y.M.C.A. School, tells why:

"We graduate from 150 to 200 men a year. Many of these graduates are real estate operators or landlords or men who have good positions in other fields and who are interested in the schools from an academic standpoint only.

"About 50% of the graduates, that is 100 men, are very desirous of entering the refrigeration field upon completing the course.

"If these figures hold true for the other two schools, it means that only 300 men are available per year in the New York metropolitan area, to enter the field as mechanics.

"These figures do not take into account the number of men who go to work for service companies as apprentices for, no matter how well a man may work in school, he must service for a period in the field before he will be accepted as a seasoned mechanic.

"In the New York area men just out of school are being hired at a starting salary of $35 per week with increases after a short period of work. Many students are hired before completing the course at $25 to $30 per week.

"We find that many former refrigeration salesmen and owners of independent service and sales concerns are turning to servicing work. If fathers in non-essential industries, men in 4-F, and veterans of the present war were to go to school to learn refrigeration servicing, the present manpower shortage would be alleviated to some extent."

Without an overall industry training program it seems unlikely that any improvement will be made in the refrigeration service manpower problem in New York City. And that not only means inconvenience for a lot of New Yorkers next summer, but also a wastage of a valuable part of our food supply.

Fire Codes For All Gases Is Available

BOSTON—"National Fire Codes for Flammable Liquids, Gases, Chemicals and Exposives, 1943" is a 504-page book recently published by the National Fire Protection Assn. written to supercede the now-obsolete edition of 1938, "National Fire Codes for Flammable Liquids & Gases."

There is a growing demand at this time, according to the association, for information on explosives, hazards involved, and the danger to human lives caused by chemicals and materials unused before the war. The book, it is explained, brings together the many standards dealing with these hazards and is divided into nine parts, as follows:

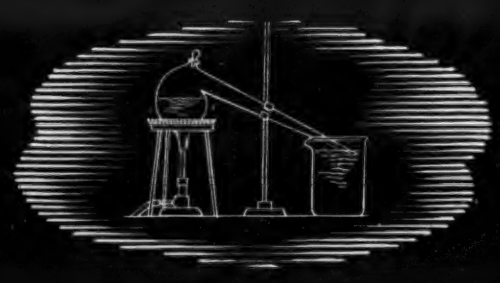
Flammable liquid storage and handling; oil and gasoline burning equipment; liquefied petroleum gases; utilization of flammable liquids; gases; refrigeration and fumigation; explosive and nitrocellulose materials; tables of properties—hazardous chemicals, flammable liquids; flash point tests.

Priced at $3.00 per copy postpaid, the book can be obtained from association headquarters, 60 Batterymarch St., Boston, Mass.

Dixie Frosted Foods Co. Adds New Laboratory

BIRMINGHAM, Ala.—Dixie Frosted Foods Co., headquarters in this city, announces establishment of a quality control laboratory at its quick freezing plant at Georgiana, Ala., with D. W. King, production manager in charge.

Ray Hosier, president of the company, has just made a trip to California to study quality control in plants there, particularly in the laboratory of H. C. Diehl at Albany, Calif. He said that various food brokers, handling his concern's products, had been invited to Georgiana to view the new laboratory and to observe various methods of determining grade standards.



Lessons From The War

From our wartime experience we can say this: When peace comes, you'll enjoy the comfort and convenience of many strange new devices which are today devoted to military purposes. They will not only extend your span of life but also will make it pleasanter in many ways. When that day comes, Weatherhead will help build these products for you just as we've helped build your car, your plane and your refrigerator in the past.

Look Ahead with WH

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO
Manufacturers of vital parts for the automotive, aviation, refrigeration and other key industries.

Plants: Cleveland, Columbia City, Ind., Los Angeles
Canada—St. Thomas, Ontario

IMMEDIATE DELIVERY OF METHYL CHLORIDE

We expect to be able to supply the current requirements of the refrigeration industry for Methyl Chloride, subject to the regulations of the War Production Board. Order what you need but please do not stock up unnecessarily. Electrochemicals Department, E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware.

Important

Don't let idle cylinders hold up supplies now available. Look through your stocks and warehouses for any empty cylinders, or cylinders which can be emptied . . . *and return them promptly.*

DU PONT

METHYL CHLORIDE

Better Things for Better Living . . . THROUGH CHEMISTRY

Many Locker Plant Applications Rejected Because Forms Submitted Are Incomplete

Special Attention Should Be Given To Making Proper Listing on Forms WPB-617 and 40-R492

DES MOINES, Iowa—Tips on filling out the application forms for new locker plant construction or expansion so that they will not be returned for further processing were brought to light during a session of the recent meeting here of the Frozen Food Locker Manufacturers and Suppliers Assn.

Less than one out of 15 applications submitted since the WPB gave approval to the program for expanding the number of plants has been filled out correctly, it was asserted. Here are some of the suggestions advanced at the meeting:

1. First fill out the Construction Form WPB-617, referring carefully to the instruction sheet and including all of the items required. The instruction sheet is separate from the form — but be sure to obtain both when you get them from the WPB office. List everything that you may possibly be going to use in equipping the plant.

2. On the "continuation sheet" of Form WPB-617 make careful reference to the instruction sheet for the "Items," "CMP Code Numbers" and "Unit of Measure" data which should go in columns (a), (b), and (c) of the continuation sheet.

3. The refrigeration unit, cooling coils, insulation, cold storage doors, lockers, fittings, pipe, and refrigeration accessories should be listed on WPB-617, but should be marked with an asterisk with an asterisked footnote explaining that these items will be duplicated and priorities sought on Form WPB-2449, the refrigeration form.

4. Item 9 on WPB-617 must include the total contract price of the plant or expansion to the man who is paying for it.

5. Power saws should be listed on Form 617, but a priority for the saw should be made on an accompanying PD-1A. The same goes for a grinder. A priority rating for the saw can be extended from the Form 617, but the PD-1A makes it more certain. Scales should be listed on Form 617, but the priority application for scales should be made on Form WPB-2581.

6. Don't list nicknacks such as knives, cleavers, and the like on Form 617.

For other information about correct procedures for making application for new locker plants, or expanding existing plants, readers should refer to the information published on pages 6 and 7 of the Aug. 16 issue of Air Conditioning & Refrigeration News; and also to the story on page 1 of the Sept. 27 issue under the heading "Change in Requirements For New Locker Plants Revealed at Meeting."

The following suggestions are made with reference to Form 40-R 492, which must be submitted to the County Agricultural War Board.

1. Enclose a blueprint of the proposed plant or expansion.

2. Be sure to give the capacity in cubic feet under "3. Locker room capacity."

3. Under Item 8 it is essential that applicants supply data on the number of families that will use the plant's facilities. A use factor of at least 150 families for the first 3,250 cubic feet of storage space with one family for each 30 cubic feet of additional space is desirable. "Be honest" on this family data, the plea was made, because the War Food Administration can require certification on such data although it is not now required.

4. If the bank refuses escrow accounts, or makes an exorbitant change for the same, the applicant should get in touch with the WFA.

5. If a curing room of reasonable size is part of and incidental to the locker plant, facilities applied for it may be okayed, but curing rooms by themselves are outside of the program.

6. In instances wherein two projects are being considered in the same town, the applicant who gets the checks in escrow first is the one who will be likely to get approval.

7. The applicant should mail the forms directly to Washington, if possible. However, if the County Agricultural War Board insists on putting the application through the State Board, the applicant should ask that a note be included telling the State Board to send it direct to Washington instead of a regional WPB office.

Following are the forms which should be submitted with the application:

4 copies of WPB-617
3 copies of WPB-2449
3 copies of any PD-1A
1 blueprint
2 copies of Form 40-R 492
1 copy of the bank letter (be sure this specifies the number of families).

Meat Rationing Chief Explains How Rulings Affect Locker Operators

DES MOINES — Locker storage plant operators were warned to "keep their skirts clean of hoarders" to avoid any of the onerous ration regulations, in an address by John J. Madigan, Chief, Meat Branch, Food Rationing Division, OPA in his talk before the National Frozen Food Locker Assn. meeting here.

There is still some agitation afoot to put lockers under rationing, Mr. Madigan said.

Any sound meat rationing program, he declared, must also encourage production and reduce wastage, and this accounts for the locker plant expansion program okay and the policy of point-free meat by farmers and tenants.

Three main functions of locker storage plants, Mr. Madigan believes, are:

1. Storage. This function is not regulated or affected by rationing orders, but the OPA feels that locker operators should cooperate with the government to prevent and stamp out hoarding practices.

2. Slaughtering and processing. This function is controlled by Rationing Order 16. A locker operator who performs this function must register as a primary distributor and collect points, submitting compliance reports and points each month.

It is absolutely essential that points be collected on offal, failure to do so constituting a violation of the regulations.

If locker plants handle more than 10% of all rationed food on a retail store basis, they must register this as a separate business, to prevent them gaining an undue advantage over those stores which don't slaughter.

Mr. Madigan said that the OPA wants locker operators to understand and be able to explain rationing to those in the community who look to the locker operator for advice.

A revision is likely in the rules which have made it necessary for the city dweller who owns a farm to surrender points for meat raised on the farm. The revised rule will probably say that "anyone who personally or by direct supervision raises livestock will get meat from such livestock point free."

Meat can be loaned by consumer to consumer, or producer to producer, but not to others crosswise, and not unless intention to repay is honest.

The "slaughterer" is the man who kills the stock. He must collect points.

Quotas on slaughtering went out as of Sept. 1. Those who have a license or permit to slaughter can slaughter as much as they can obtain points for.

If a farmer plans to sell some small part of the animal killed this should be noted on the certification which gives him point-free meat, and sent to the board so that they will know about it.

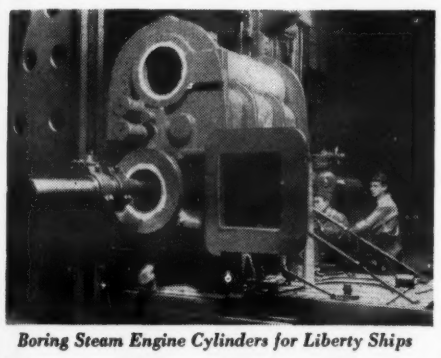
It is illegal for a locker storage plant operator to accept points for future delivery of rationed products, Mr. Madigan flatly declared. It offers an advantage for a few people over the general public.

One operator brought up the question:

"We operate a locker plant in a city, but do not slaughter. Do we have any obligation on meat brought to us?"

There is no legal obligation on the part of the locker plant operator to ask where the meat comes from, it was stated.

The suggestion was made that the National Frozen Food Locker Assn. take steps to block the necessity for keeping records on every storage.

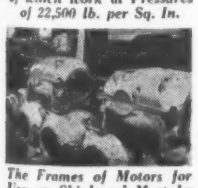


Boring Steam Engine Cylinders for Liberty Ships

Many War Jobs Being Done by the Makers of

FRICK Refrigeration

Shrinking a Liner with Dry Ice, at −110° F., before Sliding into the Cylinder, Some of which work at Pressures of 22,500 lb. per Sq. In.



The Frames of Motors for Use on Shipboard Must be Made Watertight — Without any Gaskets in the Joints!

Gun Barrels, Steel Rolls, Heavy Crankshafts, and Various Shell Vessels are Machined on this Lathe, 39 ft. Long.

While the Army and Navy keep us busy enough building refrigerating machinery, we also find time to work on many special war jobs, such as making parts for:

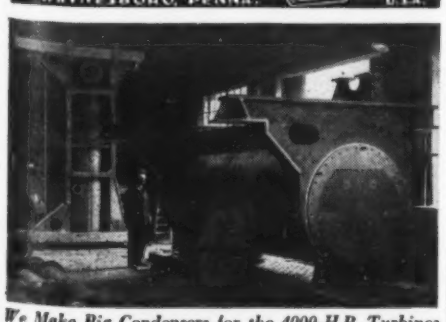
Airplanes
Army tanks
Navy pumps
Machine tools
Anti-aircraft guns
Gun-turret trainers
Large steam engines
Stratosphere chambers
Synthetic rubber plants
Explosion-proof switches
Shell-handling equipment
Complete heat exchangers
High-test gasoline plants

The makers of Frick Refrigeration are versatile! The technical skill required for building precision refrigerating, ice-making and air conditioning equipment enables them to tackle practically any engineering job. Their record of success extends over 90 years.

DEPENDABLE REFRIGERATION SINCE 1853

FRICK CO.

WAYNESBORO, PENNA. U.S.A.



We Make Big Condensers for the 4000-H.P. Turbines Used in Driving Fast Cargo Ships

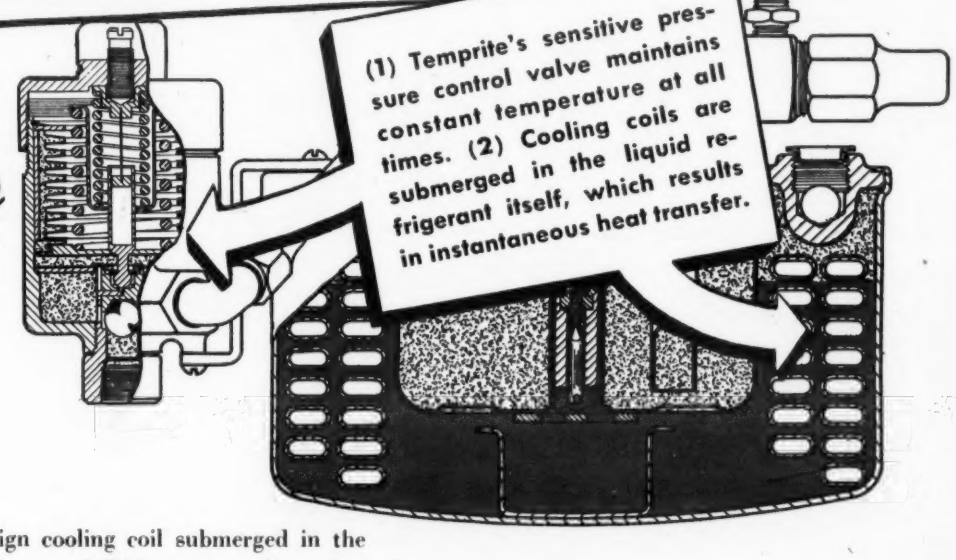
40-Page Manual Gives Lindsay Structure Data

CHICAGO—To aid engineers now engaged in postwar planning, a new 40-page Lindsay Structure Manual has been published by Lindsay and Lindsay, 222 W. Adams St., Chicago 6.

The Manual shows how Lindsay Structure can be used in the industrial, automotive and marine fields. It contains technical information about the structure and construction suggestions for all types of plain or refrigerated units.

Here are the reasons for Temprite's high operating efficiency and accurate temperature control

CROSS SECTION VIEW OF Temprite's INSTANTANEOUS WATER COOLER MODEL 22 W



(1) Temprite's sensitive pressure control valve maintains constant temperature at all times. (2) Cooling coils are submerged in the liquid refrigerant itself, which results in instantaneous heat transfer.

The special design cooling coil submerged in the liquid refrigerant is an exclusive feature of all Temprite cooling units. This feature allows the heat of the liquid being cooled to pass directly into the main body of the refrigerant. This results in instantaneous heat transfer which is the reason for TEMPRITE'S high operating efficiency. This unique design also accounts for the unusually high capacities of these relatively small, compact Temprite units and is the reason why the unit has a very high overload safety facto and extremely quick recovery from a temporary overload.

Temprite's sensitive control valve adds to the units efficiency by eliminating fluctuations in the exit temperature of the liquid being cooled.

This design and construction are exclusive Temprite features which make Temprite coolers famous for their economy of operation.

★ Sizes ★

A model available for every application. The Temprite line consists of 12 standard models ranging in capacity from 4 gallons per hour up to 2200 gallons per hour.

ATTENTION Dealers!

Temprite coolers are approved by our armed forces and are being used by them. These units are also available for dealers and distributors on authorized orders and orders direct from our armed forces. Write our Sales Department today for complete details.

Applications

1 Photographic and x-ray solution bath cooling units.

2 Drinking water coolers for all essential requirements.

3 Water and liquid cooling units for industrial applications.

4 Chemical cooling — acids, caustics, etc., for both laboratory and manufacturing applications.

5 Low temperature brines for testing and special manufacturing.

TEMPRITE PRODUCTS CORP.

Originators of Instantaneous Liquid Cooling Devices

43 PIQUETTE AVENUE • • • DETROIT, MICHIGAN

IAEL Conference Discusses Appliance Field Selling And The Postwar Market

Importance of Prefabricated Homes Stressed in League Plans

CINCINNATI—Wartime electrical activities and trends toward postwar services dominated the discussions of the eighth annual conference of the International Association of Electrical Leagues held Sept. 16 and 17 at Cincinnati's Netherland-Plaza hotel.

Officers and a board of directors for the Association were chosen at the close of the conference, attended by representatives of more than 40 electrical leagues throughout this country and Canada.

Editor's Note: The Sept. 27 issue of the NEWS presented those points in the IAEL's discussions directly concerning or closely allied to air conditioning and refrigeration. In this issue is presented the meat of what was said in serious discussion of other activities touching the major appliance field.

When a dealer taking part in a "swap your old appliances for war stamps" campaign takes in an appliance, finds no repairs necessary, and then sells it direct to another customer, he becomes a second-hand dealer, pointed out Vic Hartley, managing director of Los Angeles' Pacific Coast Electrical Assn.

What is he going to do then if local authorities step in and require him to take out a special license?

That had happened in Washington, volunteered Jack Bartlett. When that occurred, the league explained what they were trying to do, and how everybody concerned stood to benefit, including Uncle Sam. In that case the authorities gave tacit consent by merely not bringing up the matter again.

If someone should bring up the obstacle, however, and refuse to budge in spite of the cause concerned, Bartlett concluded, the only thing you can do is drop the whole thing. It wouldn't pay any dividends if every dealer had to take out a license, and most dealers wouldn't want to be licensed second-hand operators under any conditions.

The part that home economics group demonstrations are taking in the wartime nutrition program was brought before the conference by Al Kessler, of Minneapolis' North Central Electrical Industries.

Group demonstrations have done a lot during the closing summer months for people who have never tried dehydrating or canning their own fruits and vegetables before, he stated. A demonstration has the advantages, over literature on the subject, of actually showing how, as well as of answering questions that come up on the spur of the moment.

However, people will not take the time to attend demonstrations if easily understood, easily obtained booklets are available. Demonstrations take longer and require physical presence. The same material may be presented in 15 or 20 minutes' comfortable reading at home. Don't let the two methods compete against each other, he advised.

Effective demonstration selling requires four fundamental considerations, which he outlined. First, pick your audience for their interest motive. Contact people who logically have the desire to learn about better living, and who are in a position to follow through as customers.

Second, offer them a definite inducement to come. Specify the newness and improved features of the appliance you are featuring, or of the added processes you can show them in the use of their present appliance.

Third, make the appeal personal and individual, sending out not just a form announcement but a personally subscribed letter or card, one that does not have the body of the announcement in one shade of ink and the "Dear Mrs. Smith" from another typewriter ribbon.

Fourth, use adapted showmanship. Work beforehand toward an accurate estimation of the group's interest, of the garden products common to their part of the country, and give a presentation that meets their sense of values.

An extension of the field demonstration idea was contributed here by Vic Hartley. After two years of field tours, he related, and the building up of a selected mailing list, his league sponsored an Information Please tour that proved quite profitable.

The people who had attended their previous demonstrations were sent special announcements that this summer's tour would include a Board of Experts who would try to answer all questions submitted.

The announcement asked that the questions be mailed in ahead of time, and offered prizes for the most interesting and widely-questioned topics proposed. Questions from the floor also would be answered afterwards, it was noted.

Attendance was unusually high, Hartley reported, reception of the idea was enthusiastic, and orders for appliances topped both previous years' records.

Chairman for Thursday afternoon's session was Bill Ritt, secretary-manager of Minneapolis' North Central Electrical Industries. A league's primary responsibility, he said in introducing the discussions, is to help and to back up its dealers.

The individual dealer, for instance, has little time and often little ability to work out the exact meaning of the various government regulations controlling his activity. It is up to the league to interpret these for him, and to keep him posted on changes as they occur.

It is a league's responsibility also to look ahead on local market changes, he stated, and keep its dealers posted on what new appliances would face a good public demand, and what ones would stand little chance in long-range competition.

The value of consistent periodical meetings within any association was stressed by Carl Christine, presenting the experience of his own league in St. Louis as an example.

The cash value of the weekly meetings is a figure impossible to show in dollars and cents, he acknowledged, but the coordinated effort resulting, and the improved trade relations set up, have been discernible to a marked degree when considered over a year's time.

Close cooperation and understanding between the members of a league first of all build up a group confidence that is essential to any group program. You aren't apt to go out and cut the legs from under another dealer you've had a laugh and a beer with just a couple of night ago, he illustrated.

And when you know the slant of the rest of the men in your league, you can take a stand in any emergency with confidence, because you're not standing alone. Any group having frequent policy discussions presents a solid front in a campaign, whether against attack from outside or for some mutual effort like selling war bonds.

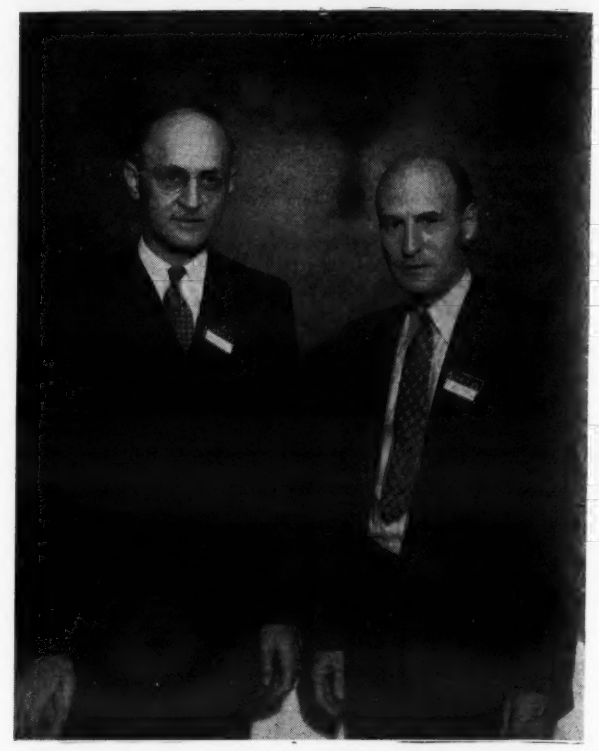
Frequent meetings moreover allow recognition of coming problems before they have reached maturity, and reaction to changing conditions in time to anticipate and meet them.

Finally, he pointed out, the presentation of interesting speakers broadens the outlook of the group as a whole. New ideas stimulate discussion, argument, new policies, and a wider interest and cooperation that cements the group into a more effective unit.

The importance of prefabricated homes as a postwar appliance market was brought out by Art Schanuel,

(Concluded on Page 19, Column 1)

Incoming and Outgoing



Bill Ritt, left, secretary-manager of Minneapolis' North Central Electrical Industries, is new president of the International Assn. of Electrical Leagues. He succeeds John Morrison, right, managing director of Philadelphia's League. Both men addressed the Assn.'s annual conference in Cincinnati last month.

the Attack must go on

The 1,000 Inlanders now serving in the Armed Forces know exactly what their 6,000 comrades on the Inland production front are doing to back the attack that must go on.

They know that the quantity and quality of Inland's war weapons and parts have earned the wide acclaim of military authorities. And they see in training camps and combat zones the results of Inland's many contributions to the products and processes of war production.

Yes, our fighting Inlanders know that Inland's war-proved "know-how" will go on working long and hard until that great day of complete and final Victory.

INLAND MANUFACTURING DIVISION
General Motors Corporation *Dayton, Ohio*

Illustrated is one of the series of Inland designed posters appearing throughout our plant and the plants of our numerous sub-contractors as part of our war production drive activities, which has helped our employes Beat Their Quotas of production for—

VICTORY WORK BY INLAND

Enlisted for Victory are the following products of Inland's Laboratory Controlled Manufacture: carbines; plastic helmet liners and extinguisher horns; tank tracks, clutches; Army truck clutches, brake linings; gun sights, shoulder rests; Army and Navy aircraft steering wheels; Marine engine motor mounts; parts for airplane motors, torpedo boats, submarine chasers, landing craft and artillery lighters.

INLAND MANUFACTURING
Rubber, Metal, Plastics

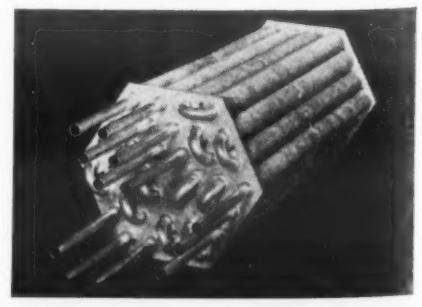
MAKE AMERICA STRONG
Keep on Buying War Bonds

CORDLEY
Electric
WATER COOLERS
ALL SIZES FOR SHIPBOARD AND LAND USE
MEET GOVT. SPECS.

CORDLEY & HAYES, NEW YORK, N. Y.

We "BORROWED"
THE STEEL FROM THE FAMOUS
MIDWEST
Reach-In CABINET Line
TO MAKE
PARACHUTE FLARES
AND OTHER
Vital ARMY-NAVY NEEDS
No more REACH-INS for the duration. But engineering, design, and research departments are hard at work!
Proudly this pennant flies over our big Galesburg plant.
MIDWEST MFG. COMPANY
GALESBURG, ILLINOIS

ROME-CONDENSER
★ Jointless Type ★



Rome Water Cooled Condenser Coils insure trouble-free condensing equipment. Used by leading compressor manufacturers.

ROME-TURNEY
RADIATOR COMPANY
222 CANAL ST.
ROME, N. Y.

Prefabricated Homes Will Present Biggest Opportunity, Conferees Are Told

(Concluded from Page 18, Column 5)

of New York's National Adequate Wiring Bureau.

Prefabricated homes, made available through mass production to hundreds of thousands of prospective home owners who could not have afforded homes before the war, will nevertheless require the standard appliances that housewives have come to look upon as necessary equipment, he declared.

They are being equipped with wiring circuits planned to handle considerably higher appliance loads. Better lighting is being stressed for kitchens, and national advertising is playing up the multiple electric servants being made possible through electronics.

The major source of home wiring troubles today is the overloading of home circuits, usually because they were installed before modern appliances had reached their full-scale maturity, Schanuel explained.

Utilities, appliance dealers, and repairmen have stressed this point again and again, and public recognition has been won to the extent that public schools in many cities now include simple home wiring instruction in their home economics classes.

Leading manufacturers have taken part with pamphlets describing home wiring circuits and how to repair them, he pointed out. And utilities and appliance dealers have found the conspicuous posting of home wiring charts an incentive to popular interest and inquiry.

The value of educational meetings to electrical maintenance engineers was discussed by Sheridan Taylor, of the Electrical Association of Philadelphia. The responsibilities of the maintenance engineer cover a variety of activities, he pointed out, touching mechanical power transmission and distribution, operation of ventilating, heating and cooling systems, and many more.

The variety of these, and the constantly new applications being introduced, ask for frequent discussion and formulation of new ideas and procedures. There is the practical side, too, he stated, for the high cost of labor and materials must be offset by increased efficiency.

The Philadelphia association has used a plan of monthly meetings to good advantage, Sheridan reported. Their meetings start in September and run until May, and present a wide field of subjects.

The current series, including illustrative movies, will present discussions on welding equipment, cold cathode lighting, electronics, fire department operations in industrial plants; salvage, substitutes, and makeshifts in wartime; infra-red drying processes, conversions from war to peacetime production, and how industry stands to gain in converting heavy machines to automatic control.

Attendance increased steadily throughout last year's series, he stated, and this year's series has been augmented by such other educational activities as refrigeration training courses, and oil burner service training. The courses have been well received, with more than 50% of the listeners being maintenance engineers from local industries.

In opening the panel discussion of postwar residential markets, Arthur Hirose, director of market research for "McCall's" magazine, presented comparative figures of changes that have already taken place since 1940, the last year before we turned to war-dominated industrial production.

In 1940, our total employment figure was 44 million; today it is 61 million, including 10 million in the armed forces.

The value of manufactured goods has more than doubled, rising from 71 billion to 145 billion, the greater part of it being materials going directly to war.

Almost all this tremendous increase represents growth quickened by war. How much of it is going to dissolve after war has ended can only be guessed at. We cannot afford to be carefree and optimistic, he warned.

Businessmen in 1919 were not able to prevent the buildup toward depression, even though most of them knew the rising curve was not sound and would have to falter somewhere.

An unemployment prediction of eight million after the war promises no picnic. If these eight million people are going to need food and clothing, where is your market for appliances and new homes and small business enterprise? We are going to have to build carefully, he promised.

The picture will be complicated, though, Hirose believed, by the fact that many manufacturers, both experienced and new, will be starting all at the same time. Many may not be quite ready for full-blown competition, but will have to jump with the gun or be left behind.

Thus the end of the war will be the beginning of tremendous temporary competition, in which each manufacturer will try to get his name and his product before the public, counting on improvement and development as he goes along. The mortality will be high before a steady market emerges, he said.

Home building certainly will increase drastically during the first 10 years after armistice, Hirose believed. It will create a huge appliance market and also an employment market that will greatly help us to regain peacetime normalcy.

Above are 40 of the conferees who met in Cincinnati Sept. 16 and 17 to discuss IAEL plans for the coming year. Among the speakers who addressed the conference, present here are Ron King (first man in the row at the left), Arthur Hirose (third man in the second row), Stan Strunk (sixth man in the third), Carl Christine second man in the fourth), Denny Shaler (fourth), and Clark Chamberlain (fifth). At the speakers' table, left to right, are O. C. Small, Bill Ritt, Gene Zachman, and John Morrison. Holding up the wall at the far left are Les Moffat (first) and Vic Hartley (second). Ernie Greenwood, Art Schanuel, and Jack Bartlett are second, third and fifth respectively in the group at the far right.

"FOUNTAINS of MORALE"

OASIS Electric Water Coolers

There's nothing better, more healthful, more sensible than cool, fresh water for getting rid of "thirst-fatigue." This recognized fact creates active business for you now—supplying Ebco's popular OASIS ELECTRIC WATER COOLERS to vital war plants. OASIS coolers assure the most enjoyable, invigorating, drinkably-controlled flow of water ever developed — they're "fountains of morale." That's because they're made in one of the most advanced production-line plants of its kind—by people who pioneered in the electric water cooler field. Write for information today!

The EBCO MANUFACTURING CO.
401 W. Town St., Columbus 8, Ohio

This Gadget Catches "Bugs"

One of a series of actual photographs taken in the Alco plant

In spite of high skill, the most conscientious work, and every modern inspection test, "bugs" will occasionally develop in any mechanism. The fixture shown above, devised by Alco, finds any vagrant defect in thermostatic expansion valves after removal from the aging oven and just before shipment.

This Final Tester puts each valve through its paces under the exact conditions it will face in a refrigeration system. It double-checks: 1) superheat setting, 2) operation of the charge, 3) adjustment range, 4) leakage, and 5) stricture in the tubing.

When an Alco Thermo Valve passes all the tests on this apparatus, it is in as near perfect working order as it is humanly possible to check. This is but another example of the high manufacturing and testing standards that assure the precise valve performance and long, trouble-free life of every Alco Valve.

ALCO

Designers and Manufacturers of Engineered Refrigerant Controls

ALCO VALVE COMPANY—853 Kingsland Avenue, St. Louis, Missouri

AMANA Commercial REFRIGERATION
Modern Display Cases
Coolers, Refrigerators
AMANA SOCIETY, AMANA, IOWA

WAGNER MOTORS for All War Needs
Send For Bulletins MU-182 and MU-183. They contain valuable motor information.
Wagner Electric Corporation
6441 Plymouth Avenue, Saint Louis, Mo., U.S.A.

MUELLER BRASS CO.
Port Huron, Mich.
TRIPLE SEAL DIAPHRAGM VALVE
Longer Diaphragm Life
Positive Sealing at Three Essential Points

PORTABLE INDUSTRIAL REFRIGERATION UNITS
FROSTRODE PRODUCTS
19003 John R, Detroit • TO 9-1340

RECOIL COILS WATER-DEFROST
U.S. PAT. 2,219,393
REFRIGERATION ENGINEERING Inc.
LOS ANGELES - CALIFORNIA

BUNDY TUBING
ENGINEERED TO YOUR EXPECTATIONS
BUNDY TUBING CO., DETROIT

REFRIGERATION PRODUCTS
fedders
BUFFALO, N. Y.

La Crosse Beer Dispensing Equipment with a National reputation for Quality and Performance.
La Crosse Novelty Box Mfg. Co.
LA CROSSE, WISCONSIN

For: TRUCKS, LOCKERS, COOLERS, COUNTERS AND CABINET CONVERSIONS, use:
KOLD-HOLD PLATES
KOLD-HOLD MFG. CO.
LANSING, MICH., U.S.A.

PURO ELECTRIC WATER COOLERS
Different models available for the various requirements of government agencies and war production plants.
PURO FILTER CORP.
440 Lafayette St., New York
DRINKING WATER SPECIALISTS FOR 40 YEARS.

COOLMASTER
"The Product Cooler of Tomorrow"
KRAMER TRENTON Co.
Heat Transfer Products
TRENTON, N. J.

Servicing Sealed Units Of Kelvinator Design

Written in collaboration with the service department, Kelvinator division, Nash-Kelvinator Corp.

Tests Will Avoid Shipping Units To Factory for Simple Repairs

General Service Diagnosis

A great percentage of sealed systems returned to manufacturers are classed as "Unnecessary Returns." By applying a few simple tests and checks, a substantial saving in time and transportation could be effected. The following chart of complaints and corrections applies generally to sealed systems, both standard and Moist-Master models:

Common Reasons For Returning Sealed Units Unnecessarily

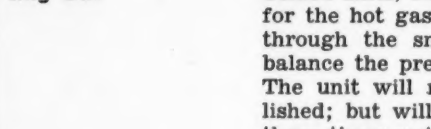
Reasons for Return	*Service Inspection*
Runs All the Time With No Refrigeration.	**Correction: Change relay.** This condition will appear evident when the cold control calls for refrigeration and the relay will not reset to start the compressor. As the fan motor starts and stops with the cold control, service men often mistake the running of the fan to indicate that the compressor is running. The best method of checking for an operating compressor is by laying your hand on the compressor dome to detect vibration.
Motor Sticks—Will Not Run After Shutting Off.	**Correction: Change relay.** This complaint invariably is a relay sticking and failing to reset. Tap the top of the relay case with your finger. If the compressor starts, it is a case of a sticking relay.
Short in Motor—Blows Fuses.	**Correction: Change fan motor.** A short in the compressor motor will not blow a fuse, but will trip the overload in the relay. A short in the fan motor will blow the house fuse because it is not protected by the relay. The best way to determine where the short is located is to disconnect the three wires at the compressor, and hook a calibrated relay and service cord assembly to the compressor to determine if the compressor will run. If the compressor runs, obviously the sealed unit is not at fault. A diagram of the relay and service cord assembly is shown in Fig. 20. **Correction: Change relay.** We have found cases where the bottom of the relay bakelite case is broken, allowing the contact screws to short on the condensing unit frame.
Compressor Will Not Run After Shutting Off.	**Correction: Allow enough time for the compressor to unload.** Sealed units, on the average, take about three minutes for the hot gas and liquid in the condenser to release through the small liquid line into the lowside, and balance the pressure on both sides of the compressor. The unit will not start until this has been accomplished; but will continue to kick the overload two or three times until the three minutes have passed.
Unit Will Not Run.	**Correction: Wire relay correctly. See Figs. 8 and 15.**
Unit Trips Relay Overload.	**Correction: Change relay.** Several cases have been found where the relay overload was weak and would not operate the compressor even though the electric current flow was normal.

Before changing a unit that seems to be noisy, examine every part of the system as it is applied to the cabinet, for cause of noise; check tubing to see that it is not touching some metal part of air duct. The condenser may be touching something or loose on mounting. Check mounting of compressor, a spring may be loose or broken. In other words, check all sources of external noise before removing unit.

Filter Claimed To Avoid Clogging of Condenser

LOS ANGELES—Drayer & Hanson, Inc., manufacturers of heat exchange equipment, has improved its Wat-R-Miser line of evaporative condensers, the company reports, by incorporating into the mechanism an air filter for the purpose of clog-prevention.

The manufacturers point out that proper filtering of the air eliminates or greatly reduces important up-keep problems such as clogging of lines.


WAR INDUSTRIES NEED REFRIGERATION
The use of refrigeration in industry has been greatly accelerated by the war. In peacetime this expansion may logically be expected to continue. Write for literature.
GENERAL REFRIGERATION DIVISION
Yates American Machine Co. Beloit, Wis.

Lipman
AUTOMATIC REFRIGERATION

Fig. 8—Wiring Diagram of 1938 Model

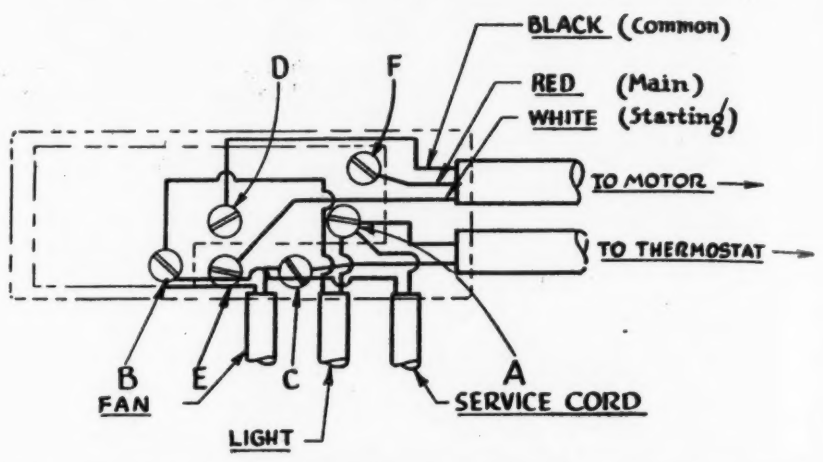


Fig. 8. Illustrating the wiring diagram and terminal connections of the relay used in the electrical circuit in the 1938 model.

Fig. 15—Wiring of Relay in 1939 System

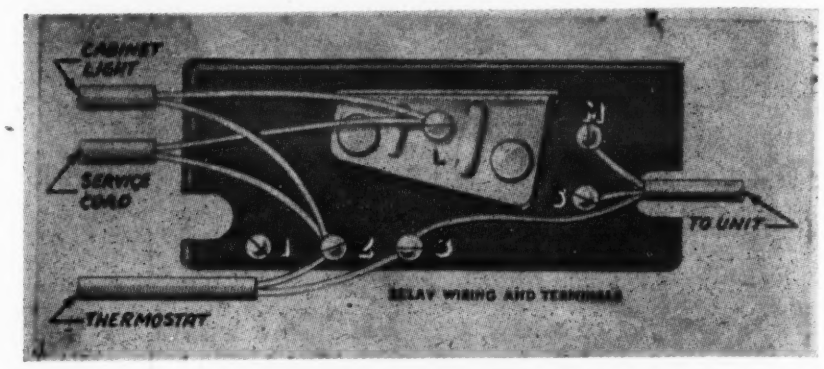


Fig. 15. Wiring of the terminals or the bottom of the relay used in the 1939 Kelvinator system.

Fig. 20.—Equipment To Test Relays

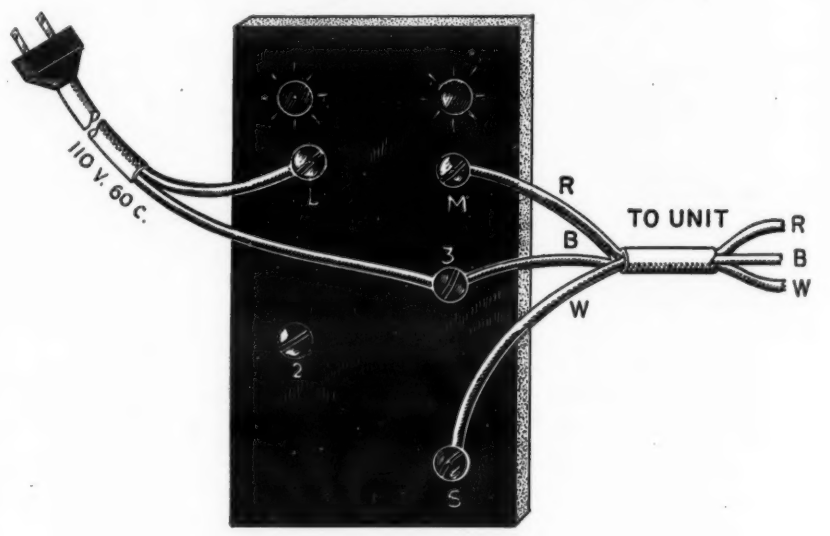
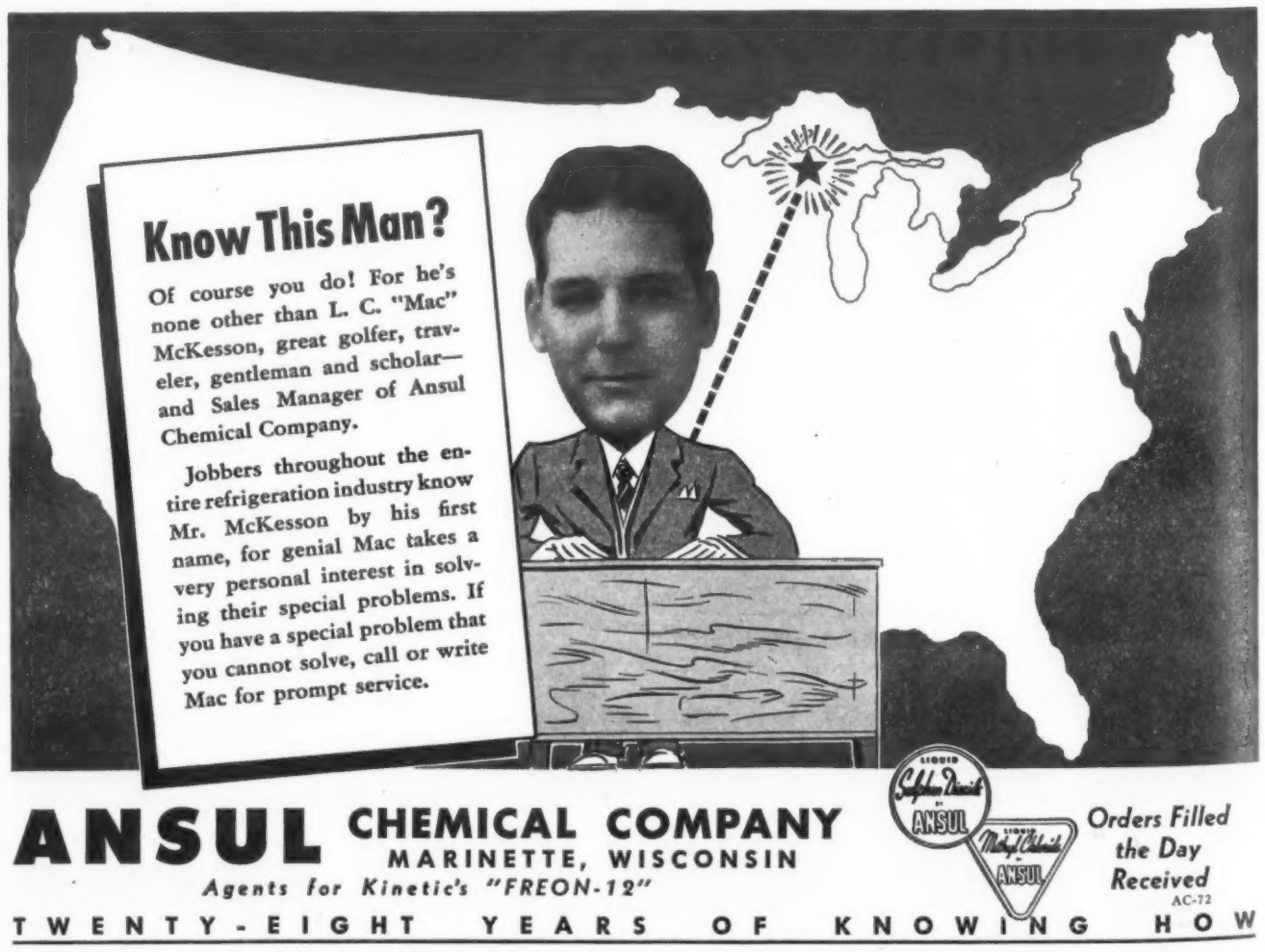


Fig. 20. In testing for an imperfect relay it is recommended that the equipment above be used. It consists of a calibrated relay, unit lead wires and a service plug.


Know This Man?
Of course you do! For he's none other than L. C. "Mac" McKesson, great golfer, traveler, gentleman and scholar—and Sales Manager of Ansul Chemical Company.
Jobbers throughout the entire refrigeration industry know Mr. McKesson by his first name, for genial Mac takes a very personal interest in solving their special problems. If you have a special problem that you cannot solve, call or write Mac for prompt service.
ANSUL CHEMICAL COMPANY
MARINETTE, WISCONSIN
Agents for Kinetic's "FREON-12"
Orders Filled the Day Received
AC-72
TWENTY-EIGHT YEARS OF KNOWING HOW

Logan, ASRE Head, Cites Need to Continue 'Unified Industry Voice'

Program Needed To 'Sell' Industry To Public; Annual Meeting To Survey Future Prospects

DETROIT—"Frequently the refrigeration industry hides its head under a basket," complained Charles Logan, national president of the American Society of Refrigeration Engineers, speaking before the opening meeting of the Detroit section of ASRE held Oct. 4 at the Rackham Foundation here under the chairmanship of Ed Kellie.

Mr. Logan was one of three speakers on the program which included talks by Lieut. Schuyler Patterson, USNR, and Sgt. Max J. Koplow, veteran Marine from Guadacanal, in addition to a showing of the Navy sound film "Life and Death of the Hornet."

Asserting that the public must be made more fully aware of the refrigeration industry, Mr. Logan declared it of vital importance for refrigeration men to set up "one voice that speaks for the industry." He assailed the lack of an overall representative group, stressing the fact that there are at least 32 different organizations representing sections of the refrigeration and air conditioning industry.

PRAISES WAR COUNCIL

"Very possibly the National Refrigeration War Council may be the answer," he said, "for that group has finally achieved a hearing for the industry in Washington."

President Logan declared that the A.S.R.E., being a professional society, had no desire on its own part to be "the spokesman for the industry."

The industry's postwar prospects are extremely bright, Mr. Logan averred, although he predicted that governmental controls will extend 18 months beyond the end of the war, and even then will have to be thrown off by the industry.

In connection with this Mr. Logan declared that the survey made by "Fortune" magazine (and planned for publication in its next issue) plus a survey made by the A.S.R.E. itself will serve as a basis for a forum discussion which will be a feature of the annual A.S.R.E. meeting in December.

Six million household refrigerators can be sold six months after the war, and there should be a big field in low temperature work, both in new industrial uses and the expected increase in low temperature cabinets for the home, farm, and store, he declared.

There is no reason to fear food dehydration as a threat to the refrigeration industry, Mr. Logan feels. There is no certainty that food dehydration will be tremendously popular after the war, and besides, proper dehydrating processes include three uses of refrigeration, he explained.

PREDICTS LONG WAR

Predicting that the war may last another five or six years and that Russia will dictate the peace terms—tough peace terms—Lieut. Patterson told the Detroit section highlights and sidelights of global warfare.

Pearl Harbor was not wholly a bad thing, he declared, for the temporary disabling of much of our fleet spurred the rapid construction of latest type battlecraft.

"One of these, known as 'Battleship X' recently crushed an attack by 144 Japanese planes of all types, bombers, fighters, torpedo planes, sending every one of the 144 enemy ships crashing into the sea.

"A Jap task force of six cruisers very wisely left the vicinity," he added, "but 'Battleship Y' was lying in wait, and while still out of sight and out of range of the enemy's guns, sank all six of the cruisers."

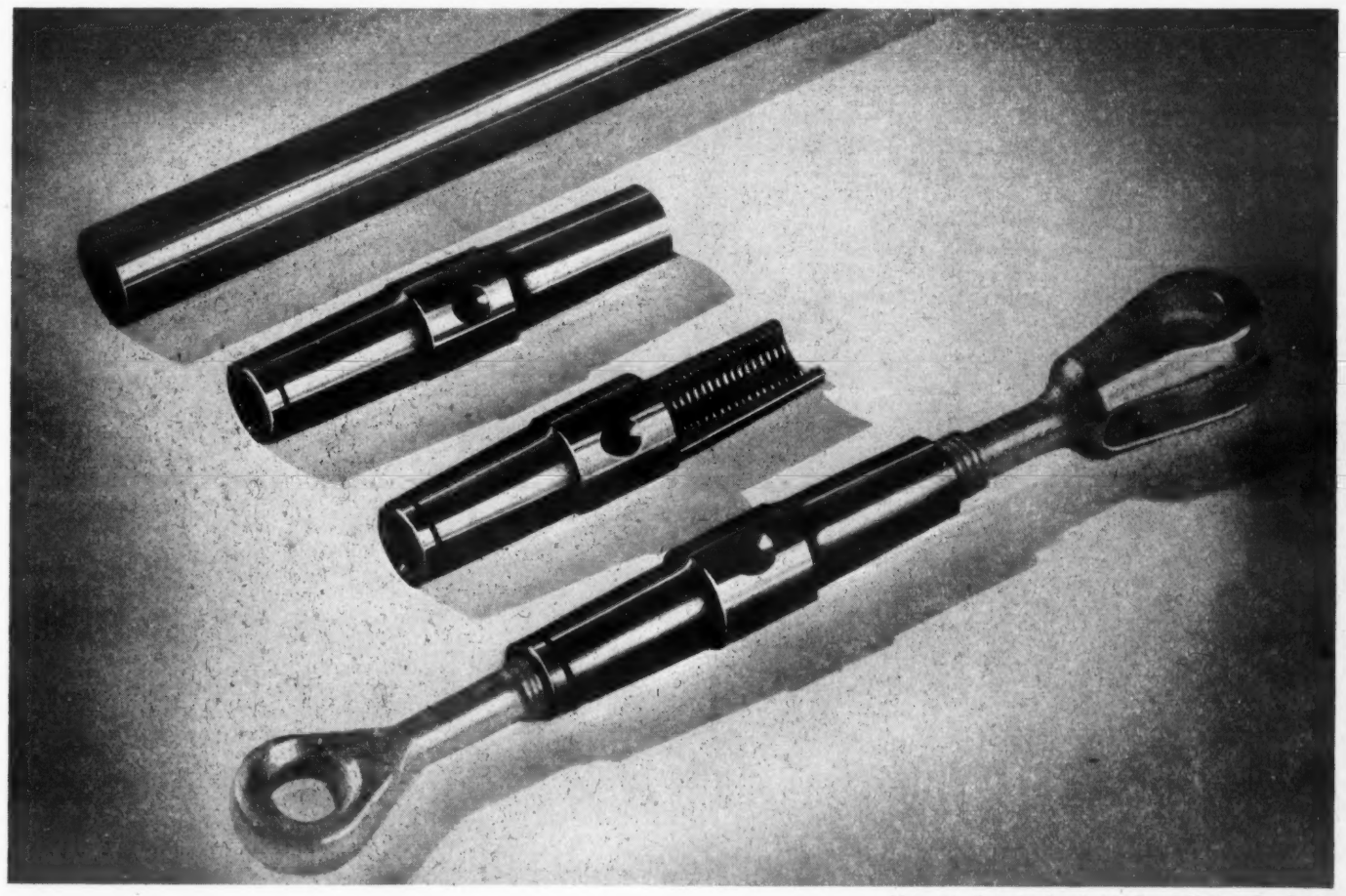
Lieut. Patterson based his predictions of a long war, he said, on the tremendous manpower of Germany—23,000,000 workers to our 12,000,000—and the knowledge of the Nazis that they face a horrible death at the hands of the enslaved peoples of Europe if they are defeated in battle. The Nazis, he avers, have no choice but to fight.

Plt. Sgt. Koplow, wounded in action on Guadacanal, tried to convey to his audience the thoughts and feelings of a man, who, with his small task force, fought 1,200 Japs on one of the Solomon islands for 30 days. The supporting naval force had been withdrawn after leaving the marines 10 days' supply of food.

"The rice we managed to capture from the Japanese did not satisfy our hunger," he said.

Servicemen Spend Their Own Time To Learn 'What Is Right' on Use of Refrigerants

Evidence that refrigeration servicemen, busy as they are these days, still will give up one of their rare evenings off to learn "how to do it right," is demonstrated in this picture of the crowd that filled the Grand Ballroom of the Blackstone hotel in Chicago at a recent meeting sponsored by Ansul Chemical Co. The meeting was held on the proper use of methyl chloride as a refrigerant, with the paper "Methyl Chloride Limitations" (published in the Sept. 13 issue of the NEWS) used somewhat as a text, with a questions-and-answers period following. On the platform are L. C. McKesson, sales manager; Herman Goldberg, Chicago agent; Dr. W. O. Walker, director of research; and F. J. Hood, secretary and treasurer, all of Ansul Chemical Co.



Material in illustration furnished by Russell Machine Co., Detroit

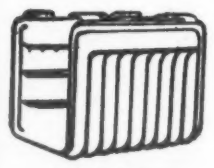
HERMETIC REBUILDING

One of the largest hermetic rebuilding plants in the United States. Refrigeration units, parts and supplies. General Electric, Westinghouse, Grunow, Majestic and Crosley. Write for catalog on your letterhead.

WESTINGHOUSE EVAPORATORS

CAN ALSO BE USED FOR OTHER REPLACEMENTS

REBUILT GUARANTEED



B 122—2 Tray
B 123—3 Tray

$6.75 Each

$4.95 Each

ASD 12—3 Tray
BSD 12—4 Tray

FLOATS

WESTINGHOUSE—GIBSON

CAN ALSO BE USED FOR OTHER REPLACEMENTS

REBUILT GUARANTEED $3.25 Each

No. S-201

While They Last

No. S-203

NOW IN STOCK

FRIGIDAIRE REED AND SEAT

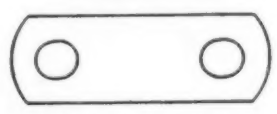
No. PE 18—Mfr. No. 83706

11c Ea.

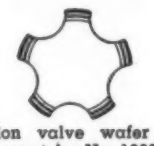
CROSLEY Replacement PARTS

Connecting Rods
No. 500—$1.12 Ea.

Capillary Tubing
No. 501—$1.09 Ea.



Discharge valve reed replacement for No. 12453
No. 502—5c Ea.



Suction valve wafer replacement for No. 12391-A
No. 503—5c Ea.

Service Parts Company
2511 Lake St., Melrose Park, Ill.

Anything like this IN YOUR PLANT?

This tubular part is especially fabricated for use as a turnbuckle barrel.

It is made of Admiralty brass seamless tube .214" I. D. with wall thickness of .112". After being machined, the part is tapped on the inside.

The use of seamless tube has achieved improvements in the manufacture of these turnbuckles and has effected considerable savings in critical materials over the old method, which required the part to be made of solid rod and then bored.

If this piece reminds you of a similar problem of yours involving tube or tubular parts, call Wolverine Tube Division for consultation and quotation.

Or if you prefer to make the part yourself, call on Wolverine anyway as a source for tube that will be uniformly high in quality and possess the right properties for fabricating. Also consult our engineers regarding types of tools, methods, and techniques. Their talents and services are yours for no cost.

★ ★ ★ ★ ★ ★

For economical buying, the standard mill quantity is 2000 lbs.

BUY WAR BONDS

• *Our new address is Detroit 9, Michigan*

CALUMET AND HECLA CONSOLIDATED COPPER COMPANY
WOLVERINE TUBE DIVISION
Seamless Copper — Brass
1413 CENTRAL AVENUE DETROIT, MICHIGAN

Erecting a Refrigerator Under Fire Is No Picnic as Soldier Describes It

Editor's Note: Experiences at the Camp Lee, Va. refrigeration school, and reports from overseas are combined by Pvt. Hess of the Camp Lee school into an account of what may happen to him and what has undoubtedly happened to other refrigeration mechanics as they perform their duties in this war.

By PVT. KARL D. HESS

All had been quiet that day, since our little slant eyed friends had not ventured over the horizon for the last six hours. We worked hard all evening and on through the night setting our portable unit in place.

Three truck-tractor trucks had made their way over the trail roads to the natural sloping terrain which was well covered with scrub trees and vines.

Our 34 sections were piled on the ground in numerical order, for they were taken from the trucks in the order that they had been piled. Under each of the five large trees surrounding the knoll we stacked a pile of sections, the lowest numerical section being on top.

Everything was running according to schedule, until we ran into a soft loose sand section which we intended using as our foundation. We dug down about six feet and found no solid base. Finally we found it necessary, after much cussing, to drive heavy piles in each corner, and evenly divide the rest of our ditch. Our piles were to form a solid flat base for our log foundation which was to be laid up in cabin style.

The logs were cut and notched for a solid corner. As we placed each log in a log cabin method, the sand was packed back tightly. When we reached the top of the ground, the last ring was leveled off, and our logjoists laid across and leveled for our floor. Many blisters and backaches were nursed as these hand hewn timbers were finally blocked.

Now, our floor was picked up, section by section, in the rotation of the piles, and bolted snugly in place. Each bolt hole was packed with loose insulation and covered with the cover. With a few chips here and there, we finally leveled off our last section of master work.

While the floor was being set in place, the side sections were worked around the bottom. First, the sections for the units themselves were placed and the bolts set but not tightened. Now every man for his job, and a job for every one of the 20 men with our unit.

We worked, sweated, and cussed as we lifted each of the 300 pound side sections in place and set the bolts while holding the rubber jackets in place. Everything was in position but two side sections opposite each other, and towards the lower end of the sides. Work was rolling along fast now, for the boys had set the log base for the units, covered it with plank and others had carried in the roof section piled with the highest numerical value on top.

The first top section was placed on the floor, and others were passing up the first section of the roof. As the bolts for the first section were set, the second was slid and placed, and the same procedure followed. Next came the third section, and as this was fastened down, the last three sections were laid on these.

As the last two side sections were put in place, the top sections were slid around in place, bolts set and tightened.

While all aerial activity was taking place, men moving in double time had placed their rope and tackle in position and with the ever trusty jeep pulled the units in place.

LIKE AN ASSEMBLY LINE

Inside the unit a busy group was tightening bolts, others were placing the precious loose packing, and still another group placed the plates over the holes. It wasn't like a madhouse of the war front, but more ilke the assembly line back home.

The whine of motors overhead made us wonder just how much protection the six inches of side wall would give us from shrapnel or how many bullets the eight inches of top would stop. Someone suggested we dive under the whole thing and let the other eight inches of floor do the rest, but we had forgotten to dig a hole in our foundation for this purpose.

Four and a half hours passed since we first set the corner floor sections in place. Now for our test. The unit had been hauled a long way over rough roads. Before we packed, in order to move, we pumped down and shut off all valves on the unit. The lines were checked, and much to our surprise, not one was broken. All connections appeared to be tight. The compressor was checked for oil level and was found to be OK. We filled it to the proper level before pulling stakes from our last stand.

It is always a safe thing to check, recheck and double check. Oh yes, you are sure you do everything just as it is taught you in Quartermaster Replacement Training Center Refrigeration School in Camp Lee, Virginia, but when you are here, and those slant eyed swine fly low overhead, you soon forget a lot you sincerely intended to do.

THEY START IT UP

The oil in the motor was checked, the water in the battery, the belts, wiring, and ignition system were all well looked over. The king valve was slowly cracked, and the joints were checked again for leaks. Each valve was opened, the expansion valve began to cool and the evaporator was cooling off. The 15 lb. of "Freon" was moving.

The system was still in the efficient working order that it was when it was being packed for transportation. The Startix switch was thrown in, the machine started in perfect rhythm as the four cylinder 13½ hp. gasoline engine turned over. At about 300 r.p.m. the automatic clutch took hold, and the compressor and blowers started their part of the refrigerant cycle. The head pressure rolled to 150 lbs.

All was well until a fatal sputter of the motor sounded forth, then a second sputter, and finally with a dying gasp it quit completely. Yes, as usual someone forgot the gas, and try as we might, we did not have the unit weaned that well.

Gas was put in the tank, and the unit was again checked and started.

CHECK AND DOUBLE CHECK

With droopy eyes and a wondering look we rechecked the valves and reread the gauges. We were ready for the check up of the other unit.

Someone has told of the glory of the Army, the right to wear the uniform. God, if anyone could see our uniforms now. Four days ago we had laced our shoes on and started in. Now, we had shoes and pockets filled with a mixture of sand and "K" rations, cigarettes, chewing gum and what not, to be eaten or smoked when we had time. That furlough and week-end pass would be heaven now. This was Sunday morning and we had still another unit to start.

The unit was checked for leaks and connections, just a mechanical procedure, and above all, the gas was added to assure the most possible relaxation of our worries. We had few worries at that. We had a bad belt and the insulation of the wires was cracked. The tire tape was low, but the rope was plentiful at least for the present.

Somewhere up ahead we heard the rumble of heavy guns and now and then, the drone of a plane overhead. Now, from behind came the rumbling sound of two truck-tractor refrigerator trailers. After three days of continuous watching, working, sweating, and cussing, our unit had moved ahead to our new location.

The supplies slowly began to roll in. The temperature inside was still up. The units had only been operating two hours. Why does the thermometer drop so slow? Was the unit charged OK? Was the expansion valve smoking? Was the compressor OK? Why were those clock ticks sounding like a heavy hammer beat? Work as we might, were still behind schedule.

Early that noon we ate our generous supplies of "K" ration, greatly fortified with the aid of cold water and a generous hunk of cold meat. Boy, what a meal. By two o'clock we built a temporary shelter from the trailer door to the unit door and now the job of transferring the load was well under way. One more truck was done and we dug our slit trenches for a good night's rest.

We work at night, sleep in the day. Hell, no! That is when we do our repairing.

Army Refrigerator Is a 'Rough Rider'

Rumbling through bivouac area near Camp Lee, Va. is this refrigeration tractor-trailer unit giving trainees of the refrigeration school at the Quartermaster Replacement Training Center a taste of what they're likely to encounter when they are transferred to combat areas.

SHERER *Self-Serve* DAIRY CASE { LIMITED NUMBER AVAILABLE WITHOUT PRIORITY

Outstanding self-serve dairy case. Immediate shipment. Builds sales and profits for YOU. *Write for franchise details.*

Also available—all types of reach-in refrigerators and walk-in cooling rooms for government procurement agencies.

SHERER-GILLETT CO., MARSHALL, MICH.

DIDN'T I TELL YOU THAT YOU WOULD PREFER *Chicago Seals* WITH THE SELF-ADJUSTING SLEEVE-LOCK?

Ask your jobber for Chicago Seals.
He has 'em or he can get them for you.
CHICAGO SEAL CO.
20 North Wacker Drive
Chicago, Illinois

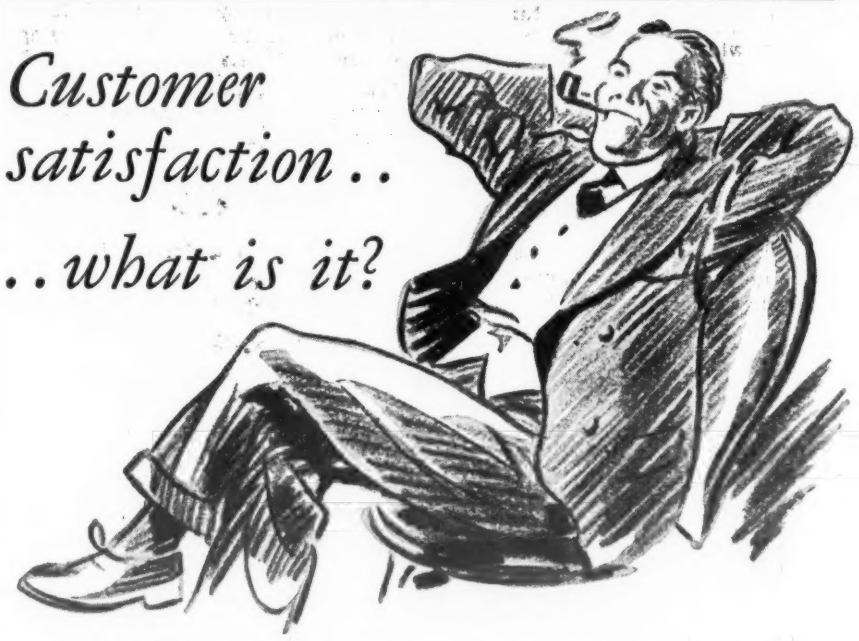
Your refrigeration parts and supply house in Central New York and Northern Pennsylvania.

TED GLOU

CENTRAL SERVICE SUPPLY CO.

409 E. Jefferson St., Syracuse, N. Y. Phone 5-4000
209 Jefferson Ave., Scranton Pa. Phone 3-4000

Customer satisfaction .. .. what is it?



CUSTOMER SATISFACTION is an indefinite term. It cannot be exactly defined because neither consumer nor manufacturer can evaluate it in terms of dollars and cents.

In the refrigeration industry the manufacturer of compressors and refrigeration units knows at least a few of the elements that make for better customer satisfaction. They are efficiency of operation, long, trouble-free service, the maintenance of proper food storage conditions and the integrity of the manufacturer.

If all of the above items are adhered to, the manufacturer attains customer satisfaction with his users—but we at Tecumseh claim that customer satisfaction is the *additional value received* when you "Standardize on Chieftain."

Remember: Chieftain engineers will help you with your postwar unit applications—no obligation, of course. So write us today!

Chieftain

TECUMSEH PRODUCTS CO.
TECUMSEH • MICHIGAN

Service Operators! If You Need a Truck Make Your Story Good and Positive

Otherwise ODT May Tell You: 'Use Your Neighbors'; Truck Company Official Can Help With the Form

"So sorry. Cannot allow purchase of truck."

No, that's not a quotation from a Japanese officer, but it is what the chairman of the Kansas City, Mo. appeal board of the Office of Defense Transportation implied when he refused the urgent appeal from an Iowa refrigeration service shop operator for a service truck.

Perhaps this chairman has never been made violently ill by eating tainted food following a breakdown of a refrigerator that couldn't be repaired in time because the serviceman had no way of transporting himself, his tools, and his repairs parts.

Perhaps this chairman hasn't heard that other branches of the Federal government consider the shortage of servicemen so acute and the maintenance of adequate refrigeration so important that refrigeration servicemen get "super-deferment" from Selective Service boards, and that the government and industry are cooperating to train new servicemen to avert a threatened widespread shortage of refrigerated food storage space due to unrepaired breakdowns.

No, the chairman couldn't have been aware of these conditions when he told this Iowa serviceman, "Due to shortage of new commercial motor vehicles, it is the Board's opinion that by cooperating with neighbors or other truckers, or securing used equipment, you should be able to take care of your requirements." Or else the chairman just didn't give a damn.

"Cooperating with neighbors!" We don't know who the neighbors of this Iowa service shop operator are. Conceivably there might be a moving company on one side and a fish peddler on the other. Maybe he could persuade the moving company to loan him a 10-ton moving van to haul a tool box, a few feet of tubing, a 10-lb. refrigerant cylinder, a few valves and switches 25 miles to repair a refrigerator.

Or maybe he could climb in back of the peddler's truck and settle himself comfortably on a bed of stinking fish.

So this Iowa operator appealed to AIR CONDITIONING & REFRIGERATION NEWS in the following letter:

"———, Iowa

"Gentlemen:

"In some of your recent issues of the NEWS you have offered your service and advice on problems pertaining to refrigeration sales and service.

"I am enclosing an application I sent in for a new service truck and this application has been denied and also the appeal. It seems to me that we should be entitled to this truck and I am wondering if there is any way you could help or suggest what I could do to help get this truck. Since originally filling in this application I have employed one more serviceman (making a total of four) and we are doing more service work than ever before.

"The garage here in town has over 30 new trucks in stock and could supply this truck from stock.

"Please advise what steps you think I should take next.

———"

Discussion of this problem with a truck expert and the Detroit manufacturer of the particular pickup model the service operator wants to buy elicited uncomplimentary remarks (to put it mildly) about the Office of Defense Transportation in general and the Kansas City appeal board in particular, besides a suggested outline of procedure for this man that all refrigeration servicemen may find useful.

"The ODT, under the direction of Joseph B. Eastman of Interstate Commerce Commission fame, has been packed with ICC boys who know nothing about the trucking industry except rates," complained the truck expert.

"And the Kansas City office is the toughest nut to crack in the whole country," he added. "These ICC fellows are simply putting up with their ODT jobs and don't seem to care whether adequate truck transportation facilities are made available or not."

First thing the serviceman should do is consult his local truck dealer and ask him to call in the truck zone manager for help in making out the proper PD application form, suggest officials of the Detroit truck manufacturer. The zone manager will know all the "in's and out's" of properly filling out the form, but more important, he is acquainted with the personnel of the various ODT boards and will know where to apply pressure and how much pressure to apply to get this appeal approved, if at all possible.

To this properly-filled-out form the serviceman should attach affidavits attesting to the validity of his request for a new truck.

He should have an affidavit, which can be prepared by a competent notary public, from "trucks for hire" firms stating that no trucks are available for hire, or are not suitable for his use.

Likewise he should have a similar affidavit from his friends and neighbors to the same effect.

Affidavits should be obtained from customers who have suffered loss of refrigeration facilities because the serviceman had no truck with which to make the service call. The more of these affidavits the serviceman can obtain, the better.

He should also include affidavits pointing out to the ODT officials that the War Production Board in Order P-126 specifically permits and encourages the repair of refrigerators because proper preservation of food is vital to the health and morale of a people fighting for its life, and that Selective Service heads and the War Manpower Commission specifically ordered that refrigeration servicemen be given "super-deferment" because of the critical shortage of these extremely important skilled mechanics.

If ODT turns down the appeal in the face of such evidence of the serviceman's need for a truck, the serviceman ought to impress his Congressman with the seriousness of the situation and have him apply pressure on ODT heads in Washington.

Another possibility is to consult district representatives of the Small Business Section of the U. S. Department of Justice. This section has had considerable success in helping small business men obtain war contracts, has aided in adjustment of ceiling prices which were harmful to small firms.

Use of Safety Heads Described by Huff To Chicago ASRE

CHICAGO—Safety heads should be used only for emergency relief, in conjunction with relief valves, in any pressure system, stressed C. E. Huff in his talk on the protection of pressure equipment before the Chicago section of ASRE Sept. 16 at Chicago's Drake hotel.

More than 60 members and their guests listened to the talk and to the discussion which followed.

Drawing constant illustration from his own experience in Kansas City, where he is chairman of the ASRE section and a member of the firm of Black, Sivalls & Bryson, Inc., Mr. Huff emphasized that pressure systems should be given multiple safety precaution.

Because of the variety of metals which can be used, safety heads can be made corrosive-resistant to almost any corrosive fluid, he said, according to the choice of rupture-disc material made.

Corrosive or viscous fluids tend to gum up valves, and here relief valves cannot be used. Rupture discs are the alternative, and Mr. Huff used charts to show the various applications and forms in which discs are applicable.

His demonstration of the rupturing characteristics of a number of discs, subjected to bursting pressures, illustrated the close tolerances to predicted bursting pressures that can be maintained in manufacture.

Harold Sharpe Named To WPB Labor Board

WASHINGTON, D. C.—Harold R. Sharpe, former proprietor of a refrigeration and radio dealership, one-time Philco Corp. employe, and present secretary and business agent of the United Electrical, Radio, and Machine Workers (CIO) local union representing Philco workers, has been appointed assistant director for labor of the War Production Board's Radio and Radar Division, announces Ray C. Ellis, director of the division.

Mr. Sharpe will be responsible within the division for handling labor problems, determining manpower needs in critical plants and areas, and obtaining appropriate interagency action to alleviate plant and community hindrances to the most effective use of available manpower, Mr. Ellis said.

Mr. Sharpe's appointment as an assistant director is the first to be announced by WPB Industry Divisions since the establishment of the two vice chairmen from the ranks of labor and is in accordance with the organization plan outlined when their offices were established.

Fahy Is Transferred By the N. A. Thrush Co.

WASHINGTON, D. C.—Thomas E. Fahy, formerly New England district manager for H. A. Thrush Co., manufacturer of hot water heating devices and specialties at Peru, Ind., has been transferred here, according to J. S. Blackmore, sales manager.

THE SPIRIT of the Automobile Pioneer . . . still leads us on.

The infamy of Pearl Harbor found the Automobile Industry ready. Scarcely had the smoke cleared before it was changing over its production lines—where necessary building additional factories in swamps and open fields.

There was no such word as *"Impossible"!*

Competition was adjourned! Patents pooled! Men and Management, with the smell of hot oil in their nostrils, raised their voices in earnest collaboration above the roar of furnaces and the scream of steel on steel—*it could, it would be done!*

Lucky for America, lucky for all the world, that someone had worked out the magic of mass production! That someone had the needed production capacity ready! That somehow there were millions of skilled workers ready, eager and able to hurl back the Axis' challenge.

Jeeps, trucks, all manner of motorized equipment rolled off the production lines! Countless tanks roared into battle! American-built planes blotted out the sun! The miracle had happened! In one year we had passed the Axis, in spite of its 16-year start on us! To this undreamed of avalanche of production, spear-headed and inspired by the Automobile Industry, our enemies can now have but one answer:

"UNCONDITIONAL SURRENDER!"

BUY U.S. WAR BONDS

HOUDAILLE* cherishes its long and close association with the American Automobile Industry—and will strive increasingly to hold a growingly honored place in its ranks.

HOUDAILLE-HERSHEY CORPORATION

Executive Offices—Detroit

Manufacturers of precision parts and equipment for the automotive, aircraft, railway, maritime, electrical refrigeration, radio, and other industries

*Pronounced: "HOO-DYE"

© 1943, HOUDAILLE-HERSHEY CORPORATION

Let U.E.I. TRAIN YOU FOR MORE EFFICIENCY—BIGGER EARNINGS

Here's how you can become a more efficient Refrigeration Serviceman—in your free time. Train yourself for BIGGER PAY through UEI's famous *Balanced Training Method.*

The Utilities Engineering Institute has scientifically developed a complete training program that will help you become a first class serviceman easily, quickly. This program has been carefully checked by prominent engineers and highly endorsed by thousands of successful students. It not only helps you earn MORE MONEY now, but prepares you for the better opportunities that are bound to become available after the war.

A BALANCED TRAINING IN REFRIGERATION SERVICING

UEI wastes no time. You begin to learn right in your own home. You get a thorough understanding of refrigeration principles. You learn refrigeration calculation . . . refrigeration controls . . . refrigeration chemistry . . . efficient techniques in trouble shooting . . . and other subjects that will help you become a MORE VALUABLE Serviceman.

When you finish this, you put into *actual* practice what you have learned. You work under *actual* conditions . . . with *actual* problems . . . with *all types* of equipment . . . and you are supervised by expertly trained instructors.

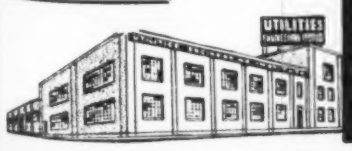
But that's not all! UEI's Balanced Training Method is so complete, so thorough, so practical—before you know it, your increased earning power can more than pay for your training.

So why not write TODAY for all the details on how you can train in your spare time to become a MORE VALUABLE Refrigeration Serviceman? UEI has trained men in refrigeration since 1927. It can SUCCESSFULLY train you, too. Write TODAY!

E. P. Sorensen, Pres.

EMPLOYERS!

Write or consult with us NOW regarding your post war needs for well-trained Refrigeration Technicians. Nation-wide service.



UTILITIES Engineering Institute

1314 West Belden Ave. Dept. 48 Chicago 14, Ill.

Locker Plants Part of the Answer To 'Keeping the Farmer on the Farm'

U. S. Official Tells How They Are a Boon To The More Desirable 'Small Farmer'

By Frank R. Wilson, Assistant Secretary, U. S. Department of Commerce*

It is impossible, in any long range consideration of our economy, to separate the interests of individual groups. If the consumer is compelled to pay too much for too long a time for food, his capacity for purchasing declines and he buys less. A healthy market for the products of the farm is thus impaired.

If the distributor, by reason of a temporary advantage, charges excessively for his service, ingenuity finds a shorter circuit and his volume is reduced. If the farmer gets too little for his product for too long a time, his capacity for future production is impaired to the detriment of all others.

Thus, any consideration of the economic importance of the locker industry to the consumer must likewise include its economic importance to the farmer for, in the effort to attain a better standard of living and a higher level of nutrition, they are partners.

One of the paramount problems facing the world today is that of increasing the production of food for the present and for the postwar period. The demands of our Army and Navy and of our allies will continue large during and after the war.

The warring nations will be slow in getting back into food production for their own needs because of the loss of manpower, destruction of property, transportation facilities and shortages in equipment. They will have to replenish their herds and they must wait for seed and season.

A very important thing that the war has taught us is that we do not, even now, produce an excess of food for our own needs. With full employment at high earnings; with rationing, and with millions patriotically limiting their purchases and consumption, most families are getting less food than they would like.

So, at last, we have discovered that the so-called over-production in the depression years was, in reality, under-consumption and, what is worse, under-nutrition. And it is important to keep in mind that our population increase since the dark days of 1932 has given us nearly 12 million more mouths to feed, while our food production acreage has scarcely increased.

How to Improve Food Production

An increase in food production calls for these essentials:

1. Greater production from existing acreage.

2. Elimination of the waste of food products resulting from the lack of preservation facilities. This wastage represents not only the destruction of goods on which labor and money have been expended but it reduces our future productive capacity by reason of discouragement resulting from a marketing system which yields lowest prices to producers in seasons of highest production.

3. It calls for greater production of food for home use on the farms and in other rural areas and less reliance on single crops to yield the wherewithal to purchase food in non-growing seasons.

4. It calls for a greater and more elastic supply of labor on the land because intensive food production demands greater relative manpower in growing seasons. This peak labor supply should not be purely transient but should, through the further development of preservation facilities, be able to store its own sustenance for the remainder of the year.

5. It calls for a reconsideration of the merits of our present trend to increasing size of farms as contrasted with the encouragement of the more intensive production characteristic of small farms. This factor should be appraised in connection with the necessity, after the war, of avoiding the excessive concentration of workers in industrial centers.

6. It calls for consideration of the question as to whether or not the return to the farmer shall be obtained from an increased proportion of the consumer's food dollar or whether he shall be required to skim more acres for an adequate return.

7. It demands that the new methods of food preservation shall be kept close to the farmer and not be employed in peace time to decrease the already small bargaining power which the farmer possesses.

If a Board of Engineers were called upon to bring forth a device to meet these seven essential needs, it could hardly improve on the locker system.

Surely, it encourages more intensive use of existing land. Surely, the locker system makes possible the elimination of waste when seasonal production outruns demand. Surely, the conversion of food from a perishable to a non-perishable product levels consumer prices and makes production and distribution sounder businesses.

The Way in Which It Will Help Farm Labor

Surely, the local availability of facilities for preservation encourages the farmer to grow more of his own food and, if more widely available in the single crop areas, would encourage necessary diversification through self-interest. Surely, when the system becomes general, it will attract a greater and more elastic supply of labor on the land in the same degree that it encourages intensive food production.

And its facilities for conserving a greater food supply at the source will encourage transient labor to become permanent. More small farm operators, available to devote part time working for neighboring farmers would help to alleviate the general farm labor shortage. For labor alone the farms spent $781 million in 1939.

It puts a greater element of safety in intensive agriculture and by opening new opportunities on the land reduces the degree of explosive concentration of unemployed in the cities. In the degree with which village and city families make use of locker service, storing products purchased directly from the farmer or from local distributors, it operates to obtain for the farmer a larger proportion of the consumer's dollar and at the same time cheapens food to the consumer. It adds to the farmer's bargaining power by providing another avenue for at least a portion of his produce.

One point that I have touched upon deserves amplification. It has to do with the increasing size of farms and the consequent decline of farm population and the possibility of a reversal of that trend in the public interest.

Farmers Have Been Leaving

In the decade from 1930 to 1940, 24 states, largely agricultural, either had net losses of population or suffered out-migration that more than wiped out excess of births over deaths. Even Iowa, which showed an actual population gain of 67,000 in reality had a net out-migration of 81,000 in the decade, because births in this state exceeded deaths by more than 150,000, and in that 10-year period Iowa's non-farm population increased by 115,000, emphasizing still more the extent of the farm decline. The same thing was true—in some, to a much greater degree—in practically all of the farm states.

The affected area is a great circle extending west from the New England states; down the Mississippi Valley; eastward through the Southern agricultural states and north along the Atlantic seaboard to Pennsylvania. Since 1940, the trend has sharpened.

In the last three years nearly 3,700,000 have migrated from farms and the farm population of the United States — once 95% of the whole — is approaching 20%. From 1910 to 1940 the average size of farms increased from 138 to 174 acres.

Any pioneer who remembers the relationship between population increase and the growth of property values, particularly in the Middlewest, will realize that the reversal of this long time upward trend has serious implications. In industry, mechanical efficiency has paralleled that of farms. In manufacturing alone, more than one million workers annually are forced to seek new employment by reason of technical advances.

There can be no permanent prosperity for any group without reasonably full employment of our labor force at fair wages. If we deprive workers of jobs—on the land or off—by increasing the productive capacity of each worker, obviously we must at the same time increase consumption and thus elevate living standards. At the same time, we must be constantly developing new industries, like yours, and new products which new living standards will require.

Farms For Returning Soldiers?

Since it is agreed that close to 10 million new jobs will be needed after demobilization to prevent dangerous unemployment, it is fair to ask how agriculture can assume its quota of these jobs. Already there is Congressional discussion of a measure to give Federal aid to soldiers who want to return to the land.

Now it is obvious that, since we olny have about 500 million acres of crop land, engaging a constantly decreasing number of workers, any plan to make farms available to more families can only mean smaller farms. That forces us to a consideration of the capacity of small tracts to provide adequate family income; whether the higher productivity per acre of smaller farms fits into the need of greater food production from existing acreage, and whether or not the new processes of food preservation such as freezing enhance the success of small unit production and marketing.

If localized quick freezing plants improve the chance of success of small farms, obviously any general program to put more families on the land should include encouragement of the extension of this service.

Fortunately, we have, as a result of the 1940 census, figures which show how the value per acre, and dollar production per acre, of small farms exceed those of larger farms.

The 506,000 farms of 10 acres and less had in 1939 per acre value of land and buildings of $418 compared with $44 for the 486,000 farms ranging in size from 180 to 259 acres—a ratio in acre value of more than 9 to 1.

Of course, part of this is accounted for by the higher allocation of building value per acre on the smaller farm. But that does not account for the wide difference of $374 per acre. A substantial portion is the capitalization of the much higher value of production per acre which small tracts show over large ones.

Small Farm Is More Efficient

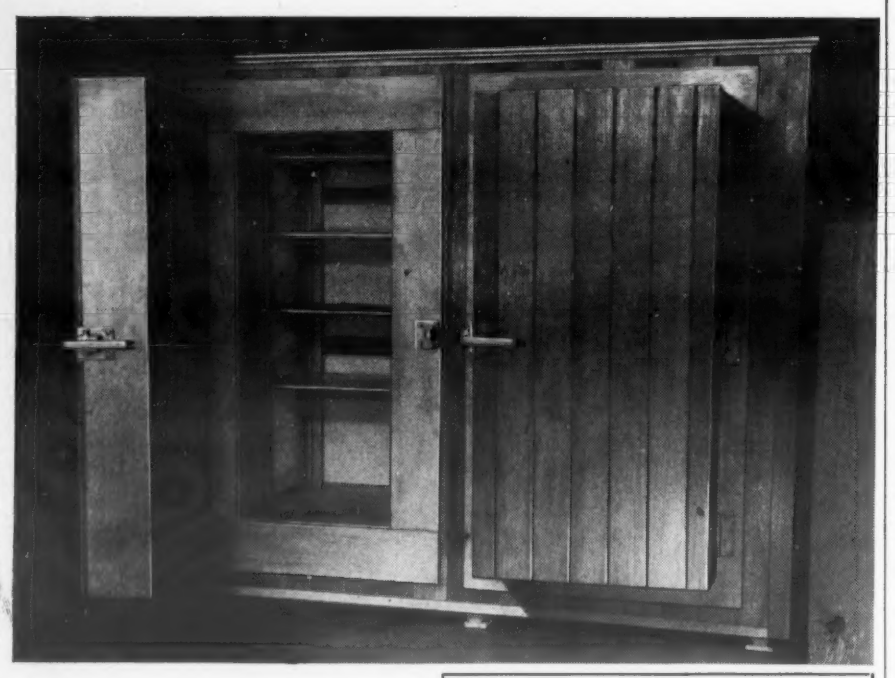
A 2% sample of production per acre by size of farms selected from the more than six million farms reported in the 1940 census showed calculated average value of farm products per acre of $107.49 for farms of 10 acres and less whereas the value of products per acre for farms of 180 to 259 acres was only $10.08 per acre—a ratio in production per acre of more than 10 to 1.

Now it may be contended that, since these figures embrace all of the farms in the United States, they would be unduly weighted by the small, intensive farms of the East and South so as to be of little value in appraising small farm opportunities in the areas of large unit operation.

But, taking the West North Central group of states as a unit—Iowa, Minnesota, the Dakotas, Nebraska, Kansas and Missouri—the contrast is almost equally striking. Value of products per acre on farms of 10 acres or less in this area was $87.78 per acre compared with $10.23 per acre for tracts of 180 to 259 acres—a ratio of nearly 9 to 1 in favor of the small farm. In Iowa for instance the 28,000 acres devoted to commercial vegetable production in 1939 yielded $45 per acre as compared

(Concluded on Page 25, Column 1)

*Address before the annual convention of the National Frozen Food Locker Association, Des Moines, Iowa, Sept. 20-22.



Save 1/3 on Sharp Freezer Insulation

IT takes less Zerocel to do an efficient job of low temperature insulation. That's why it is the choice of engineers like the Salem Engineering Company of Salem, O., designer and builder of the sharp freeze refrigerator shown above. Extremely low thermal conductivity is combined with physical and chemical stability. This means more than just efficient insulation. For Zerocel is moisture-resistant, odorless and immune to fungi and vermin. And it's so resilient it will neither sag nor settle even under severe vibration.

WRITE TODAY FOR FULL STORY on efficient, low-cost Zerocel. Our staff of insulation engineers will be glad to make recommendations on specific problems. Address Industrial Sales Division, National Gypsum Company, Buffalo, New York.

GOLD BOND ZEROCEL

NATIONAL GYPSUM COMPANY, BUFFALO, N. Y.

Nothing else fills the bill like the "RECALIBRATOR"

NOW that gauges and dial thermometers face harder and longer service, and heavier responsibilities, you have more reason than ever before to look for that "Recalibrator" screw.

It's the sign of an instrument that *is* accurate to begin with, and can be *kept* accurate always.

No one has ever found a way to build a gauge that can't be knocked out of adjustment, *but* . . .

—Marsh has found the one completely satisfactory way to do something about it. When a "Recalibrator" gauge is knocked out of adjustment, the twist of a screwdriver corrects it—actually recalibrates the gauge so it is accurate again at every point on the dial.

• The "Recalibrator" is available on all Marsh Gauges—standard on all Marsh Dial Thermometers. It is typical of the advanced design, the helpful features you'll find throughout the broad Marsh line—all products of 75 years of specialization. Write for refrigeration catalog.

JAS. P. MARSH CORPORATION
2067 Southport Avenue, Chicago, Illinois

MARSH
Refrigeration Instruments

Quick-Freezing and Locker Storage Solve Small Producer's Marketing Problem

(Concluded from Page 24, Column 5)

with the average of $17 for all farm land in the state.

There is adequate statistical evidence to prove, therefore, that the small farm out-produces and out-values, per acre, the large farm.

Why, therefore, has small unit farming not increased? Perishability of product is one important reason, and unfavorable prices in seasons of high production is another. Disadvantage in small volume marketing is a third reason. To two of these obstacles the frozen food locker industry has the answer. To the third it has a partial answer.

It is clear that the area of intensive farm operation can be extended far outside the immediate proximity of cities if the product can be preserved by freezing. Because of this, vast areas of land, suitable for intensive operation, can be opened to greater usefulness and greater values, supporting more people who will buy more goods from retailers and factories — people who would nuture their smaller acreage instead of "mining" it.

Less Waste Aids Small Farmer

It is equally clear that if by freezing, a small operator can be freed from waste and from forced selling to avoid wastage, he will have overcome his principal marketing problem. And his product should cost the consumer no more than at present because the consumer rarely gets the benefit of low prices resulting from forced selling. The consumer will benefit in the long run not only because of improved quality but because of a stabilized price level and more constant year round supply.

It is not difficult to foresee the day when thousands of cold storage locker plants located in thousands of villages may become important factors in farm marketing not only for the small farmer but the large one. They are already making the products of the farm available to village and city residents and dealers in localized production areas. This will become a factor of increasing importance as locker service is extended to urban families. It can become a major factor in agricultural and consumer welfare if locker plant operators perfect standardization, packaging and inspection for consumer and dealer acceptance.

But, even then, a missing link would have to be provided. That missing link is the refrigerated warehouse through which a large number of locker plants would assemble into carload lots the processed products of the farm for shipment to large consuming centers for distribution through established local dealers.

Larger Warehouses Needed

Some conception of the immense possibilities of this development for the farmer, the locker plant operator and the big city consumer can be had from the fact that the refrigerated car rate on frozen meats, processed and packaged for consumer use, from Missouri River points to the City of Washington, D. C., is only one cent a pound.

This development might easily be the answer not only to the high and fluctuating cost of living in cities, and the regional discrepancies in prices, but to the attainment of the farmer's goal of getting a fairer share of the consumer's food dollar.

Because the economic value of any industry in the crucial period of conversion after the war will be measured by its capaciyt to consume materials and employ workers, it is proper to appraise the future of the locker industry from these points of view.

The fact that nearly 2,000 plants which you had planned could not be built because of material shortages would seem to indicate a sharp upward pre-war trend. But the more potent factor presaging expansion would seem to be the high degree of food consciousness that the American people have developed while counting ration stamps.

When peace comes, your industry must meet the competition of old and other new industries in the adjustment between accumulated deficits in needed goods and the accumulated backlog of purchasing power. Let us assume that within a reasonable period after the war you can extend locker service to 50% of farm homes; to 40% of rural non-farm homes, that is, villages of 2,500 and less, and also to 20% of urban homes. This assumption, numerically, is equivalent to less than 50% of all homes in population concentrations of less than 50,000.

Now, what would such an expansion mean in terms of dollar investment, labor and materials? It would mean a total of nearly 11½ million lockers as compared with approximately 37 million homes in the United States.

If these lockers should be installed at a capital investment of $35 per locker, the industry expansion would call for over $350,000,000 of new capital. If one-half of this investment represented labor and the other half materials, the manufacturing and construction, exclusive of operation, would provide 146,000 man-years of labor, equivalent to over 29,000 workers for a five-year period. But from the point of view of the consumer, this expansion would have far more important economic implications.

11½ Million Lockers?

These 11½ million lockers, storing an average of 275 pounds of food, would be holding a reserve of more than three billion pounds and the yearly turnover of food in these lockers, at the rate of 600 pounds per locker, would be nearly seven billion pounds.

What effect such a reserve of foods would have in stabilizing the operations of both the producers and consumers can be better appraised when compared with the adequate diet requirements of the nation.

The Department of Agriculture says that an adequate diet consists of 1,651 pounds of food per capita of which 284 pounds is made up of meats, fish and vegetables. These are the items which would naturally constitute the greater part of the locker food reservoir.

Thus an adequate diet of meat, fish and vegetables for all our people approximates 37 billion pounds so that the constant reserve of these essential foods in 11½ million lockers would represent nearly 10% of the annual need and the yearly turnover capacity in these same items would be nearly one-fifth of annual national requirements.

It is plain that since fluctuation of prices of foods between seasons of glut and scarcity takes an immense toll from both the producer and consumer, the existence of such a reservoir and such capacity would exercise a leveling influence on living costs and at the same time insure against destructive factors in production. Moreover, it would be a powerful factor in helping the nation meet a great emergency like the one through which we are now passing.

We are accustomed to think of Iowa as fairly well supplied with locker service even though less than 100,000 families have the service available, but if 50% of the farm homes in Iowa should acquire lockers plus 40% of rural non-farm homes, plus 20% of urban homes, the number of lockers in Iowa would have to be expanded to about 250,000. Even this figure would represent a little more than one-third of the occupied home units in Iowa.

Real Need In the South

While the locker system has been making large contributions to better living in the areas in which is has been developed, it would seem to have its greatest opportunity to perform a real economic service to Southern agriculture where it has barely scratched the surface.

Figures in the 1940 census would seem to make this abundantly plain. Thirteen Southern states butchered on the farm in 1939 more than 7,170,000 hogs or more than half of the United States total. Southern farmers are required to butcher smaller hogs because prevailing temperatures make curing of larger carcasses difficult.

If locker service in the South should make it possible for Southern farmers to grow their farm butchered hogs 50 pounds heavier, they would be adding to the nation's pork supply in a single year nearly 360 million pounds. And the growing and butchering of beef for home use, now very limited in the South, would greatly expand.

While these 13 Southern states butchered more than half of the farm slaughtered hogs in 1939, they killed only 57,000 beeves out of a total farm slaughter of 580,000—less than 10%—and nearly half of these were in Texas and Oklahoma.

Thus, freezing facilities would not only result in better living by making fresh meat available throughout the year but it would automatically divert cotton land to the growing of crops for finishing meat animals and that would be meeting one of the most serious economic problems for Southern agriculture.

Your industry is unique in that it originated in the grass roots and moved toward the city, a reversal of the usual practice. You have been so engrossed with the problems of installation and operation that you have not had the time to give adequate thought to the public relations problem of selling your economic importance to the nation.

What the U. S. Should Be Told

I think there is need for a comprehensive presentation—by states and by Congressional districts—of your case as it relates to the vital question of food production and long range agricultural and consumer economics.

Such a presentation should answer these questions:

Would the extension of your industry increase our food supply?

Does it make better use of manpower in food production and does it meet the need of better nutrition?

Does it contribute to better living and add to the attractiveness of land culture as a way of life?

Can it be a factor in decentralization and in the avoidance of undue industrial unemployment in cities?

Does it bring the producer and the consumer closer together?

Will it foster better culture of the land, preserving our land resources for future generations?

If you can't get BRASS or BRONZE!

Switch to Permanent Mold Iron Castings Made by the Eaton Permanent Mold Process!

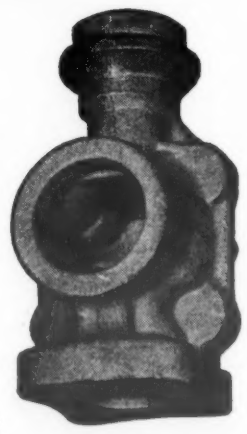
If you are finding it increasingly difficult to obtain Brass Castings or Bronze Forgings, a conversion to Permanent Mold Iron Castings produced by the Eaton Permanent Mold Process may be your answer—for these four big reasons:

1. PERMANENT MOLD IRON has a fine-grained homogeneous structure—a factor that makes it absolutely free of porosity.

2. PERMANENT MOLD IRON compares favorably with Brass and Bronze in machinability, can be worked with little change in present machine tool setup.

3. PERMANENT MOLD IRON is a lower base cost material.

4. PERMANENT MOLD IRON CASTINGS can be produced in complex, cored designs or simple shapes with accuracy and uniformity, by this patented EATON PERMANENT MOLD PROCESS.



In numerous conversion applications over the past ten years, Permanent Mold Iron Castings—made on our battery of rotating, 12-head, semi-automatic, volume-producing machines—have successfully met Industry requirements.

Let us give you the whole convincing story.

EATON

EATON MANUFACTURING COMPANY
Foundry Division
9774 FRENCH ROAD • DETROIT, MICHIGAN

THE AMCOIL *FOOD CONDITIONER*

Having graduated from the blueprint stage, the Amcoil Food Conditioner is now under construction, and soon the details can be announced.

This new development of war-seasoned Amcoil engineering is a compact, portable food conditioner controlling moisture as well as temperature. Designed especially for Walk-In Boxes, it is completely automatic, and permits adjustments necessary for varying quantities and types of foods.

Only the best (priority) materials are used in the new Amcoil Food Conditioner. For this reason, it will first be manufactured for use on transport planes, combat and merchant marine vessels, army commissary departments, etc. After Victory, it will be used for hotels, packing plants, storage houses and other industrial applications.

This new development is another example of the vast reservoir of technical information which Amcoil has accumulated from pre-war and wartime experience in air-conditioning, refrigeration and high and low temperature testing.

More details coming soon.

AMCOIL
AMERICAN COILS CO.
25-27 LEXINGTON STREET • NEWARK, N. J.

PATENTS

Weeks of Aug. 24 & 31

(Continued from Sept. 27 Issue)

2,328,472. SPLIT EVAPORATOR FOR COOLING SYSTEMS. Timothy J. Lehane and Everett H. Burgess, Chicago, Ill., assignors to Vapor Car Heating Co., Inc., Chicago, Ill., a corporation of New York. Application Jan. 19, 1942, Serial No. 427,258. 6 Claims. (Cl. 62—8.)

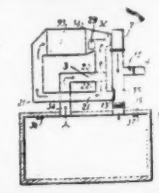
1. In a cooling system, means for supplying and circulating a refrigerant comprising a compressor interposed in the refrigerant circuit, a motor for driving the compressor, an evaporator comprising a plurality of separate sections arranged in parallel in the refrigerant circuit, a pair of thermostatically controlled means responsive to temperature changes in the space cooled by the system, one of these means directing the continuous flow of refrigerant to one of the sections as long as the temperature is at or above a predetermined temperature and the other means also causing at least an intermittent flow of the refrigerant to a second section while the temperature is above another higher temperature, this flow to the second section becoming continuous at or above this predetermined maximum temperature.

2,328,511. REFRIGERANT EVAPORATOR. Gustav Thomas, Dresden-Loschwitz, Germany; vested in the Alien Property Custodian. Application July 27, 1938, Serial No. 221,493. In Germany June 21, 1935. 7 Claims. (Cl. 62—126.) (Granted under the provisions of sec. 14, act of March 2, 1927; 357 O. G. 5.)

1. A refrigerant evaporator for a refrigerator cabinet, consisting of a refrigerant header integral with an ice tray carrier of U-design forming a chamber open on three sides, having continuous longitudinal surfaces, located below the header and having a plurality of tubular passages each of which is at both ends in direct communication with the interior of the header and which are traversed by the refrigerant, the header and ice tray carrier being cast integrally from a corrosion-proof and acid-resisting metal alloy, preferably of light metal.

2,328,521. UNIT AIR CONDITIONING SYSTEM. Robert A. Wittman, Chicago, Ill., assignor to Chicago By-Products Corp., a corporation of Illinois. Application Dec. 9, 1939, Serial No. 308,355. 9 Claims. (Cl. 183—4.1.)

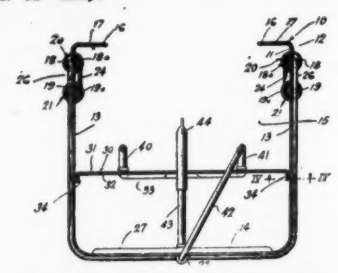
1. In combination, a body of adsorbent for dehumidification of a room, fluid impelling means adapted to be continuously driven, a duct leading from the room to



said body and through said impelling means, a bypass duct around said body, a delivery duct from the impelling means to the room, a room humidistat and means controlled thereby for controlling the bypass to regulate the rate of dehumidification effected by the body, a valved bypass from the delivery duct of the impelling means to the intake side of the body, control means responsive to the loaded condition of the body for causing operation of the valve of the bypass to provide a substantially closed fluid circuit which includes said impelling means, said body and said valved bypass, and heating means disposed in said closed circuit and governed by said control means to heat the fluid in said substantially closed circuit.

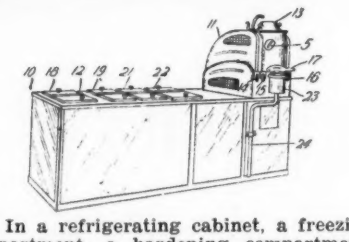
Weeks of Sept. 7 & 14

2,328,723. EVAPORATOR. Bernard C. Johnson, Libertyville, Ill., assignor to Houdaille-Hershey Corp., Detroit, Mich., a corporation of Michigan. Application Dec. 2, 1940, Serial No. 368,187. 8 Claims. (Cl. 62—126).



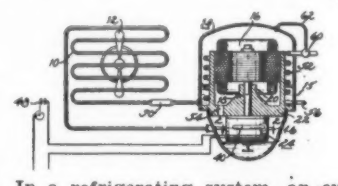
1. A sheet metal evaporator unit having a bottom and side walls with a pair of superimposed header chambers in each side wall, refrigerant circulating flutes on one face of the unit connecting the lower header chambers, flutes on the opposite face of the unit connecting the header chambers of each pair whereby the passageways defined by the refrigerant circulating flutes are in offset relation from the passageways defined by the flutes connecting the header chambers of each pair, a shelf bridging the side walls above the bottom of the unit, localized lateral projections spacing the shelf from the side walls, refrigerant circulating flutes on the shelf, a refrigerant inlet tube secured to said shelf and having an upstanding leg portion at the rear end of the shelf, a refrigerant outlet tube having an upturned leg portion secured on said shelf and joining the shelf flutes with the refrigerant circulating flutes of the unit, a suction flute embossed on the unit connecting the top chambers of said pairs and a single suction tube communicating with said embossed flute and having a leg portion extending upwardly from the bottom of the unit at the rear end thereof, said upstanding leg portions of the tubes being arranged to act as tray stops.

2,328,810. REFRIGERATING APPARATUS. Herman K. Johnson, Grand Haven, Mich., assignor to the Bastian-Blessing Co., Chicago, Ill., a corporation of Illinois. Application May 3, 1941, Serial No. 391,656. 13 Claims. (Cl. 62—114).



1. In a refrigerating cabinet, a freezing compartment, a hardening compartment, refrigerating means of the dry system type for cooling said compartments, said system comprising a high pressure expansion coil for a refrigerant for said freezing compartment, a low pressure expansion coil for said hardening compartment, means for maintaining a higher pressure within said coil for said freezing compartment than within said coil for said hardening compartment, said coils having a common conduit for conducting the refrigerant discharge therefrom whereby the refrigerant discharged from the high pressure coil may escape into the coil having a lower pressure for preventing short cycling of the machine.

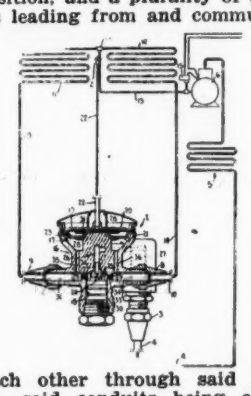
2,328,824. REFRIGERATING APPARATUS. Alex A. McCormack and Richard E. Gould, Dayton, Ohio, assignors to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Feb. 19, 1942, Serial No. 431,472. 2 Claims. (Cl. 62—115).



1. In a refrigerating system, an evaporator, a fixed restrictor, a condenser, a multiple vane rotary compressor having inlet and outlet ports, refrigerant flow means between said evaporator, restrictor, compressor and said condenser including a casing within which said compressor is mounted and into which said compressor discharges, means for varying the capacity of said compressor including means for increasing the effective size of said inlet port, and means wholly within said casing responsive to the refrigerant pressure therein for operating said capacity varying means.

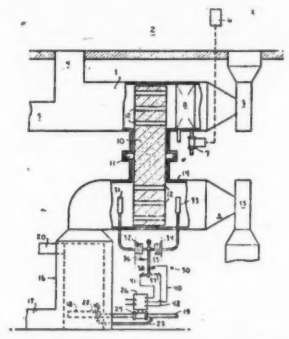
2,328,874. REFRIGERATING APPARATUS. Earnest J. Dillman, Detroit, Mich., assignor to Detroit Lubricator Co., Detroit, Mich., a corporation of Michigan. Application May 14, 1942, Serial No. 442,907. 3 Claims. (Cl. 62—127).

1. An expansion valve for supplying refrigerant to a plurality of evaporators, comprising a valve body having an inlet and a plurality of outlets and containing a valve chamber, said body having a passageway leading from said inlet to said chamber, a valve member controlling admission of refrigerant from said passageway to said chamber, said body having a plurality of distributor outlet passageways opening separately from said chamber and leading one to each of said outlets, each of said outlet passageways having a calibrated port closely adjacent said chamber, said body having a pressure chamber, a pressure responsive member closing said pressure chamber and operable to move said valve member toward open position, and a plurality of equalizer conduits leading from and communicating



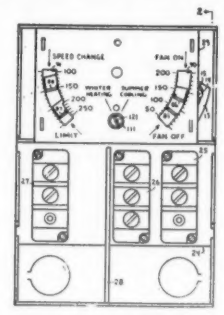
with each other through said pressure chamber, said conduits being connected one into each of said outlet passageways on the outlet side of said ports.

2,328,974. AIR CONDITIONING SYSTEM. George D. Guler, White Plains, N. Y., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Jan. 30, 1941, Serial No. 376,621. 6 Claims. (Cl. 183—4).



1. In an air conditioning system, air conditioning means, means for circulating air over said air conditioning means and through a space to be conditioned, said air conditioning means comprising a member of moisture absorbing material arranged to present continuously different surfaces thereof to the flow of air, reactivating means including heating means and fan means for circulating heated air to drive moisture from a portion of said member which is not exposed to the flow of space conditioning air, said reactivating function causing the heated air to give up heat to said member and to the moisture driven therefrom, first control means responsive to the temperature of the heated air before reaching said member, second control means responsive to the temperature of the heated air after leaving said member, and means mechanically connecting said first and second control means for controlling the heat content of said air by the simultaneous action of said first and second control means.

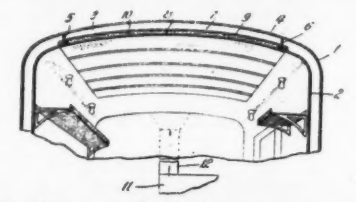
2,329,094. COMBINATION SWITCH. Daniel G. Taylor, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Feb. 19, 1941, Serial No. 379,566. 18 Claims. (Cl. 200—138).



1. A condition responsive control device, comprising in combination, an element movable in accordance with the magnitude of a variable condition, a driving member connected to said element and rotatable about an axis upon movement thereof, control means operable between a first position and a second position, a driven member movable transversely to said axis and operatively connected to said control means, a link pivotally attached to said driven member at a point substantially in line with said axis, stop means for limiting the rotation of said link in each direction, and a two-way strain release between said driving member and said link, said strain release comprising a first flexible connection including spring means tending to rotate said link in a clockwise direction, and a second flexible connection including spring means tending to rotate said link in a counterclockwise direction, said spring means balancing each other so that said link rotates with said driving member until said stop means is engaged, whereupon one of said spring means is rendered ineffective, and the other spring means becomes effective to move said link transversely of said axis, thereby moving said driven member and operating said control means.

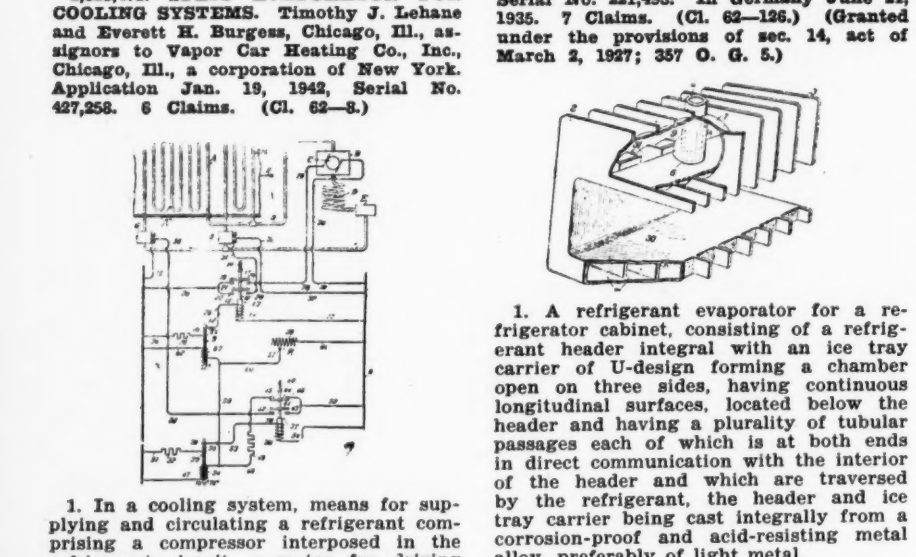
2,329,102. AIR DISTRIBUTING APPARATUS FOR VENTILATING SYSTEMS. Alfred S. Chipley, Chicago, Ill., assignor to Burgess Battery Co., Chicago, Ill., a corporation of Delaware. Application June 30, 1941, Serial No. 400,486. 3 Claims. (Cl. 98—14).

1. In a ventilating system including a distributing duct having at least one side exposed to an enclosure to be ventilated and being otherwise closed and means for continuously supplying ventilating air to



said duct, a perforated panel forming a wall of said duct in an exposed side thereof, a layer of unrolled expanded sheet material interiorly contiguous said panel with respect to said duct, the orientation of said expanded sheet material being such that the structure thereof is disposed predominantly transversely of the air stream within said duct, and a

(Continued on Page 27, Column 1)

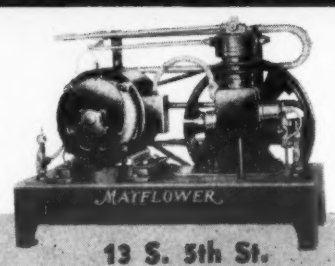


THE HARRY ALTER CO.
1728 S. Michigan Ave. Chicago, Ill. — Two Big Warehouses to Serve You — 134 Lafayette St. New York, N. Y.

GENUINE *MAYFLOWER* UNITS & PARTS

Complete stocks of genuine Mayflower parts are now available. Full line of air and water-cooled condensing units is also available to meet your priority requirements. Order from your jobber or from the manufacturer. Insist on genuine Mayflower parts.

Jobber inquiries invited.



MAYFLOWER PRODUCTS, INC. 13 S. 5th St. Richmond, Ind.

REFRIGERATION PRODUCTS

Humi-Temp Forced Convection Units—Patented CROSS-FIN-COILS—Bare Tube Coils—Zinc Fused Steel Plate Coils—Disseminator Pans—Heat Exchangers—Evaporative Condensers—Instantaneous Water Coolers—

LARKIN COILS, INC. 519 MEMORIAL DR., S. E., ATLANTA, GA.

STANGARD PRIME SURFACE
Cold Plates
FOR MAXIMUM EFFICIENT REFRIGERATION

★ FOR Locker Plants, Sharp Freezing, Ice Cream Cabinets, Hardening Rooms, Soda Fountains, Storage Rooms, Milk Coolers, Liquid Cooling, Food Counters and other similar uses.

Write us today for complete information and catalog

STANGARD-DICKERSON CORP. Specialists in the Manufacture of all types of COLD PLATES
46-76 Oliver Street Newark, N. J.
Stangard facilities are contributing to the production of materials for our National Defense

CLASSIFIED ADVERTISING

RATES for "Positions Wanted," 5¢ per word; minimum charge, $2.50. Three consecutive insertions, 12½¢ per word; minimum charge, $6.25.

RATES for all other classifications, 10¢ per word, minimum charge, $5.00 per insertion. Three consecutive insertions, 25¢ per word, minimum charge, $12.50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count.

EQUIPMENT FOR SALE

TWENTY ⅓ H.P. Kelvinator air cooled highsides, complete with motor, high and low pressure switch, used, good condition. Price $37.50 F.O.B. New York. Write for our surplus list. EDISON COOLING CORP., 310 E. 149th St., Dept. "R", New York 51, N. Y.

USED TEMPERATURE recorders suitable for checking control-processes ranging from zero to 80 F. Recorders have 12" dials, 24 hour spring-wound clocks, wall mount aluminum-alloy cases, 5' flexible copper-armored capillaries, and ⅜" x 3" copper bulbs. No priority required. Further information and prices upon request. AUTOMATIC PRODUCTS CO., 2450 N. 32nd St., Milwaukee, Wis.

ELECTRIC DRY bottle coolers, equipped with ¼-hp. Universal compressor, blower coil and vending machine. Plug-in job. $150 net. Streamlined ice coolers, 3-case capacity (12-oz. bottles) $23.50 net. All brand new. Streamlined. No priority. Box 1473, Air Conditioning & Refrigeration News.

65 CU. FT. REFRIGERATORS, reach-in style with five (5) solid doors, natural oak front, white enameled interior, completely self-contained with ½ HP. condensing unit and blower coil installed ready to attach to 110 volt electric service. Brand-new in original crates available for immediate shipment without priority to dealers and distributors. $415.00 net. F.O.B. midwest shipping point, 25% with order, balance C.O.D. or S.D. B/L. J. GEO. FISCHER & SONS, INC., SAGINAW, MICHIGAN. SINCE 1889.

KELVINATOR MODEL SCA, 750 ½ hp., air-cooled room cooler. Walnut finish. A-1 condition. $275. P. O. Box 157, Ashtabula, Ohio.

30 CUBIC FOOT self-contained refrigerators with ice makers or blower coils, complete with condensing units. General Electric panel-type blower coils, 1,750, 2,500 and 3,750 B.t.u. and ice making cooling unit. All new guaranteed equipment. No priority required from dealers. RAMSEY BROS. CO., 727 Bolivar Rd., Cleveland, Ohio.

EQUIPMENT WANTED

WANTED TO BUY—Complete refrigeration business in the East or Middlewest, or any amount of surplus parts and motors. Box 1477, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

EXPERIENCED REFRIGERATOR serviceman, preferably one with knowledge of Stewart-Warner electric refrigerators, to work in large Florida city. Permanent position which will continue after the war. Ideal climate and pleasant working conditions. All applications treated strictly confidential. Box 1474, Air Conditioning & Refrigeration News.

POSITIONS WANTED

ENGINEER, COMMERCIAL refrigeration, 20 years' experience as sales engineer, supervisor of installation, and as distributor of low and high pressure systems, wishes position as supervisor of installations, sales or field representative. Box 1475, Air Conditioning & Refrigeration News.

MARRIED MAN, 39, wishes connections with business or manufacturer requiring services of an air conditioning technician or commercial refrigeration service man. Christian, no liquor, no smoking. Box 1476. Air Conditioning & Refrigeration News.

HEAT TRANSFER EQUIPMENT
MARLO COIL COMPANY
SAINT LOUIS, MISSOURI

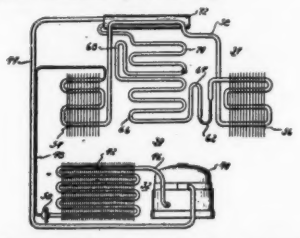
Seamless PENN BRASS and COPPER TUBING
PENN BRASS & COPPER CO

Patents (Cont.)

(Continued from Page 26, Column 5)

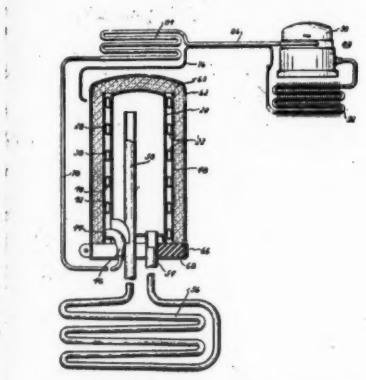
second perforated panel substantially coextensive with said first mentioned perforated panel and contiguous to said expanded sheet material and disposed on the side thereof opposite said first-mentioned perforated panel and contiguous to said expanded sheet material and disposed on the side thereof opposite said first-mentioned perforated panel.

2,329,139. REFRIGERATING APPARATUS. Hugh J. Scullen, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Aug. 8, 1940, Serial No. 351,811 and claims. (Cl. 62—8).



1. Refrigerating apparatus comprising a relatively high pressure evaporating section and a relatively low pressure evaporating section connected in series with said high pressure section, said low pressure section having an accumulator at the outlet thereof in heat exchange relation with a portion of said relatively high pressure evaporating section for condensing evaporated refrigerant therein.

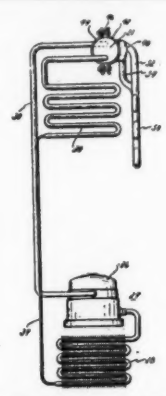
2,329,140. REFRIGERATING APPARATUS. Hugh J. Scullen, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Aug. 23, 1940, Serial No. 353,942. 6 Claims. (Cl. 62—116).



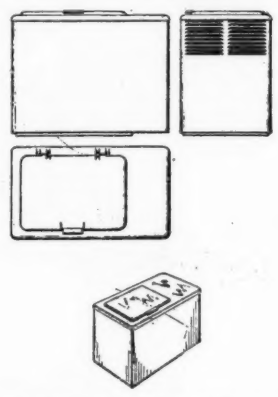
1. Refrigerating apparatus comprising a primary refrigerant evaporator, a secondary refrigerant condenser in heat exchange relation with said evaporator and means surrounding said evaporator and condenser for sealing same against circulating air thereabout.

2,329,141. REFRIGERATING APPARATUS. Hugh J. Scullen, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Aug. 23, 1940, Serial No. 353,943. 6 Claims. (Cl. 62—116).

1. Refrigerating apparatus comprising a primary refrigerating system including an evaporator having a liquid refrigerant accumulator, a clamping member having a surface adapted to conform to the outer surface of said accumulator and being removably secured to said accumulator and a secondary refrigerating system including a condenser secured to said clamping member for thermal association with said accumulator and a secondary evaporator connected to said condenser.

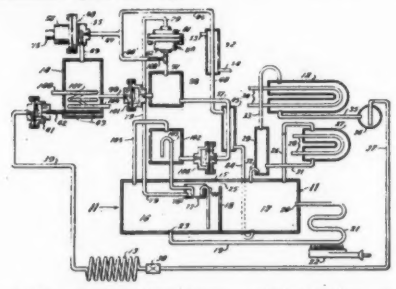


136,305. DESIGN FOR A FREEZER CABINET. Wilford H. Teeter, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application May 27, 1943, Serial No. 110,307. Term of patent 14 years.



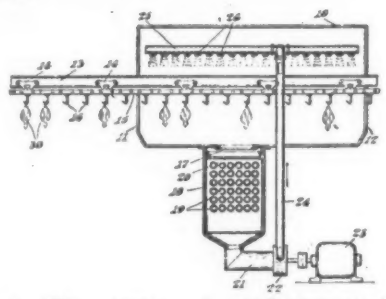
The ornamental design for a freezer cabinet, as shown.

2,329,192. REFRIGERATING APPARATUS. Andrew Flukes, Chicago, Ill., assignor to Mills Novelty Co., Chicago, Ill., a corporation of Illinois. Application March 11, 1939, Serial No. 261,172. 12 Claims. (Cl. 62—5).



1. In absorption type refrigeration apparatus, the combination with a generator, a condenser, an evaporator, an absorber and means for conducting a refrigerating mediuum from the generator through the condenser and evaporator to the absorber, of means for conducting absorptive solution weak in refrigerant from the generator to the absorber to absorb refrigerant vapor therein, means for returning strong solution from a point of normally low pressure associated with the absorber to a point of normally high pressure associated with the generator, and means for controlling such return of the strong solution, said last-mentioned means comprising means for periodically balancing the pressures on the absorber side and the generator side of the apparatus means for conducting vapor from the generator side to the absorber side to replace the strong solution which is caused to flow back to the generator side of the apparatus when said pressures are balanced, and means whereby the strong solution after being returned to the generator side of the apparatus causes termination of the return flow of such solution when a predetermined quantity thereof has been returned.

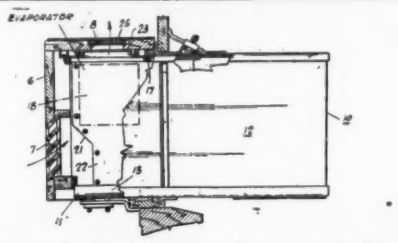
2,329,226. POULTRY FREEZING. Earl Stafford, Reading, Mass., and Charles Hunt Welling, New Canaan, Conn., assignors, by direct and mesne assignments, to Z Pack Corp., Boston, Mass., a corporation of Delaware. Application Jan. 9, 1942, Serial No. 426,158. 6 Claims. (Cl. 62—170).



6. The process of producing tender quick-frozen poultry, which consists in subjecting a freshly killed bird to a refrigerating spray at a temperature of 23 degrees to 30 degrees F. for about 15 to 30 minutes, and thereby rapidly reducing the body temperature of the bird below 50° F., maintaining the bird in chilled but unfrozen condition until rigor mortis has passed, and then quick freezing the chilled bird by directly contacting the bird with a spray of refrigerated brine.

2,329,342. AIR CONDITIONING APPARATUS. John L. Ditzler and Richard E. Holmes, Springfield, Mass., assignors to Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., a corporation of Pennsylvania. Application March 18, 1941, Serial No. 384,000. 3 Claims. (Cl. 62—129).

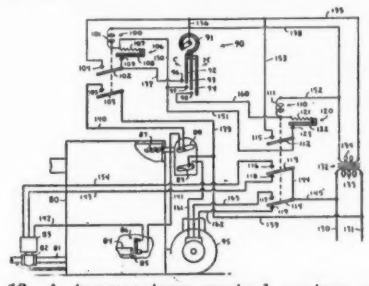
1. In a self-contained unit air cooler adapted to be mounted in a window, the combination of a housing structure including a vertical partition dividing the same into a cooling compartment and an apparatus compartment, a compressor, a condenser and a fan in said apparatus compartment, said fan effecting flow of air from outdoors over the condenser and back to outdoors, a motor disposed in the apparatus compartment for driving said fan and having its shaft projecting through said partition into said cooling compartment, a centrifugal fan disposed in said cooling compartment and having its rotor overhung on said projecting portion of said shaft, an evaporator disposed in said cooling compartment laterally of said shaft, the cooling compartment having an inlet communicating with the inlet of the centrifugal fan and having an outlet communicating with said evaporator, wall means disposed about said evaporator to form a passage through which air flows vertically into contact with said evaporator to said outlet, said passage having an inlet portion directly below the evaporator, said centrifugal fan being arranged and having its outlet connected to said inlet portion in such manner that air is discharged from the lower portion of the fan horizontally directly into said inlet portion.



2,329,472. FREEZER STORAGE. Carl H. Koonz, Chicago, Ill., assignor to Industrial Patents Corp., Chicago, Ill., a corporation of Delaware. No Drawing. Application May 12, 1941, Serial No. 393,115. 11 Claims. (Cl. 99—194).

3. In the process of storing food products, the step of freezing an aqueous glaze on the surface of the product, said aqueous glaze containing a substance selected from the group consisting of bentonite, fuller's earth, kieselguhr, diatomaceous earth, silicia gel, chalk, carbon black, kaolin and clay.

2,329,636. CONTROL SYSTEM. William L. McGrath, Philadelphia, Pa., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., a corporation of Delaware. Application Jan. 18, 1941. Serial No. 375,009. 18 Claims. (Cl. 236—68).

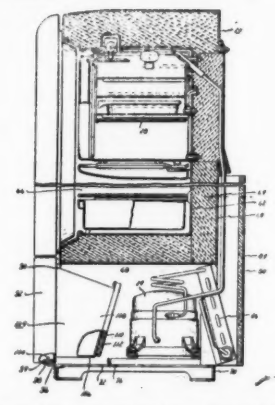


12. A temperature control system comprising in combination, temperature changing means, thermostatic means movable in response to a condition indicative of the need for operation of said temperature changing means, a switch operable by said thermostatic means upon movement thereof, a relay for controlling said temperature changing means, a holding switch operated by said relay, a normally closed heat responsive switch, electrical heater means for opening said switch, an energizing circuit for said relay including said thermostatically operated switch, and a holding circuit for maintaining said relay energized for a predetermined time after opening of said energizing circuit, said holding circuit including said holding switch, said electrical heater means, and said heat responsive switch, said thermostatically operated switch serving to shunt said heater means so as to maintain said relay continuously energized while said thermostatically operated switch is closed and to delay the operation of said heater means during a period when the thermostatically operated switch is chattering.

2,329,647. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Application Nov. 25, 1940, Serial No. 366,991. 1 Claim. (Cl. 220—9).

A refrigerator cabinet comprising in combination, inner and outer casings spaced apart with insulation interposed therebetween and being arranged to form the walls of a compartment with an opening being provided in one of said walls, means rigidly connecting said inner casing to said outer casing, a closure member for said opening, an inverted L-shaped metallic frame carried by said connecting means and cooperating with said outer casing to form a pocket therewith, a strip of non-conducting material having a portion extending into said pocket and over the outer face of said inverted L-shaped frame and in contact with said means and terminating in overlapping relation with said inner casing, a ledge member extending around the inside of said opening to provide a seat for said closure member, a second inverted L-shaped member having a portion embedded in said ledge member and a portion extending over said strip and means extending through said second inverted L-shaped member and said strip to lock said ledge member to said inner casing.

2,329,648. REFRIGERATING APPARATUS. Lawrence A. Philipp, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporation of Maryland. Original application Aug. 8, 1940, Serial No. 351,834. Divided and this application June 23, 1941, Serial No. 399,314. 1 Claim. (Cl. 312—155).



Refrigerating apparatus comprising a cabinet having a compartment with an opening in a side wall thereof, a hollow tiltable compartment door formed of thin sheet metal material for closing said opening, a frame for the lower portion of the cabinet and forming a base therefor and being arranged adjacent the bottom of said compartment, an elongated, L-shaped member in cross section carried by said frame and being disposed with one leg extending upwardly from a horizontal portion, the horizontal portion of which is adapted to support said tiltable door and the vertical leg of which is arranged to extend through an opening in a wall of said door, gasket material positioned in said opening and surrounding said vertical leg and resting on said horizontal position, and a vegetable bin disposed in said compartment and secured to said door, the weight of which is sufficient to maintain the door in vertical position when not in use.

VISOLEAK

SAVES time — SIMPLIFIES leak detection problems — CONSERVES refrigerant.

VISOLEAK reveals "hard to find" leaks of all refrigerants. Add 4 oz., plus an extra ounce for each 10 lbs. of refrigerant, to system.

4 ounces, $1.00; 8 ounces, $1.75. Pint, $3; Quart, $5; Gallon, $16.

Buy from your jobber or write to

Western Thermal Equipment Co.

5141 Angeles Vista Blvd. Los Angeles 43, Calif.

Quick Service on HASCO REBUILT PARTS

● Ready to ship, over 225 HASCObilt parts and supplies give service equal to new equipment at fraction of cost. Conserve critical materials and give speedy service at saving to you and your customer! Parts supplied ready to install. Be prepared, be informed regarding HASCO Service. Have the HASCO catalog at hand for ready reference.

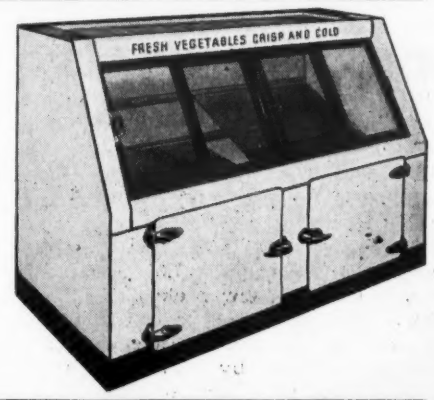
Send for Illustrated Catalog and Price List

HASCO, INC.

GREENSBORO, N. C.

TRY TYLER

Tyler's amazing progress in recent years represents a trend that will continue in the future. Investigate the profit possibilities for Tyler distributors; tie up with Tyler for long-swing prosperity. Write today. TYLER FIXTURE CORP., NILES, MICH.



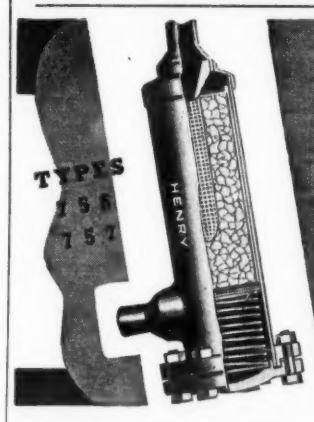
"MOISTURE'S MASTER"
DAVISON'S
SILICA GEL
—USED IN ALL WELL-KNOWN DRYERS
YOUR JOBBER CAN SUPPLY YOU

Electrimatic
Automatic Control Valves and Regulators
2100 Indiana Ave., Chicago, Ill.

Established CURTIS REFRIGERATION AIR CONDITIONING COMMERCIAL 1864
Curtis Refrigerating Machine Division
of Curtis Manufacturing Company
1912 Kienlen Ave. St. Louis, Mo.

DOLE
VACUUM PLATE
COOLING & FREEZING UNITS
CHICAGO

PAR
COMMERCIAL REFRIGERATION UNITS FOR PROTECTION OF VITAL FOOD SUPPLIES
See Your Par Jobber
LYNCH MANUFACTURING CORP.
DEFIANCE, OHIO, U.S.A.

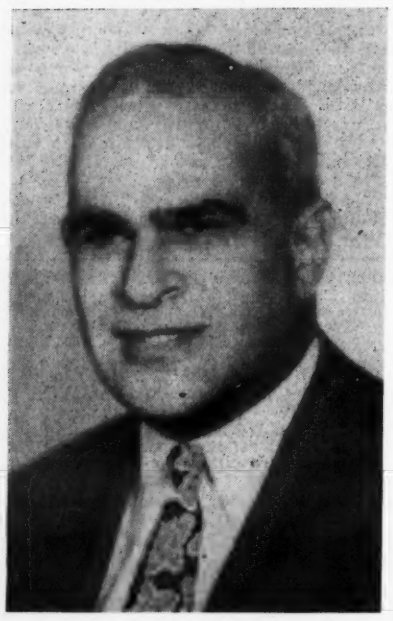


HENRY
CARTRIDGE DEHYDRATOR
With Side Outlet and Dispersion Tube
This exceptional design permits easy removal and replacement of cartridge without loosening end connections. Dispersion tube for increasing drying efficiency and minimizing pressure drop is incorporated as integral part of refill cartridge.
Ask your jobber for it.
FILLED WITH SILICA GEL OR ACTIVATED ALUMINA
HENRY VALVE CO. 1001-19 N. SPAULDING AVE. CHICAGO, ILLINOIS

FOGEL EQUIPMENT AVAILABLE TO MEET YOUR NEEDS
OUR INVENTORY OF PRIORITY AND NON-PRIORITY ITEMS INCLUDES:
DISPLAY CASES · REACH-INS · WALK-INS
BEER WALL CASES AND BEER PRE-COOLERS
BOTTLE COOLERS · DAIRY AND PRODUCE CASES
MANUFACTURERS OF ALL TYPES OF COMMERCIAL EQUIPMENT.
INQUIRE TODAY! ADDRESS DEPT. 102
FOGEL REFRIGERATOR COMPANY Philadelphia, Penna. Since 1899

EXCLUSIVE INTERLOCKING
TWO - TEMPERATURE CONTROL
The Ranco 91-0 has two-fisted efficiency. It is your guarantee of uniform fixture temperatures, uniform high relative humidity and completely automatic defrosting of the coil regardless of weather or load conditions . . . and regardless of the compressor being in a cold location. Ranco 91-0 has independent external adjustments for cut-out and cut-in. Independent visual scales show exact settings.
Ranco 91-0 can be used in single or multiple unit systems . . . natural or forced convection units. Excellent for walk-in coolers, display cases, florists' boxes, etc.
WRITE FOR DETAILS
Ranco Inc. COLUMBUS, OHIO

Will Speak Before Illinois RSES



HERMAN GOLDBERG

Chicago manufacturers agent, will address members of the Illinois R.S.E.S. at their sixth annual convention to be held in Rockford, Ill., Oct. 16-17.

* * *

Sixth Annual Meeting Of Illinois Group Set For Oct. 16, 17

(Concluded from Page 1, Column 2)

will start at 10 a.m. Sunday, at which time members will hear committee reports, elect new officers, and be addressed by the International R.S.E.S. president E. J. Pleskott, and Herman Goldberg, Chicago manufacturers agent. Mr. Goldberg will discuss "Refrigeration Service Now and After the War."

Annual banquet for members and their wives is scheduled for 1 p.m. Sunday, and will be followed by the afternoon meeting at 2:30. After the installation of newly elected officers there will be a talk on "News and Views" by an unannounced speaker, and an address by Clarence Buschkopf, vice president of the international R.S.E.S.

Ladies who attend the convention will be entertained by members of the Rockford R.S.E.S. Auxiliary.

Convention registration fee is $2.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1944

Of Air Conditioning & Refrigeration News published weekly at Detroit, Mich. for October 1, 1943.
State of Michigan }
County of Wayne } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared George F. Taubeneck, who, having been duly sworn according to law, deposes and says that he is the Editor of the Air Conditioning & Refrigeration News and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, Business News Publishing Co., Detroit, Mich.

Editor, George F. Taubeneck, Grosse Pointe, Mich.

Managing Editor, Phil B. Redeker, Detroit, Mich.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Business News Publishing Co., 5229 Cass Ave., Detroit 2, Mich.

Stockholders: Margaret B. Cockrell, Detroit; George F. Taubeneck, Grosse Pointe; Helen C. Henderson, Detroit; Edward L. Henderson, U. S. Naval Reserve; Phil B. Redeker, Detroit; John R. Adams, U. S. Naval Reserve; Walter J. Schuler, Detroit; John P. Belleman, Detroit; James B. Smith, Dearborn.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

George F. Taubeneck
(Signature of editor.)

Sworn to and subscribed before me this 16th day of September, 1943.
[SEAL] M. Helen Cockrell
(My commission expires Dec. 25, 1943.)

Tank Plant Hospital Air Conditioned

BERWICK, Pa.—In the hospital of the great American Car and Foundry Co. tank arsenal here, modern air conditioning equipment has been installed for the benefit both of patients and hospital attendants.

A Carrier self-contained air conditioning unit, located within a closet from which ducts carry the air, supplies conditioned air to the dispensary, operating room, X-ray room, doctor's office and surgical room.

Dr. R. F. Wear, company physician, believes that the air conditioning installation has proved beneficial.

Greenwood To Manage Carrier International

(Concluded from Page 1, Column 2)

a director of a number of General Electric subsidiaries in Europe.

His first foreign assignment was in China as a member of the faculty of Hunan Polytechnic Institute, in Chengsha, which followed his graduation as a mechanical engineer from the University of California.

He is a member of the American Society of Mechanical Engineers and of the American Society of Civil Engineers. He has long been active in the Council on Foreign Relations and is a director of the American-Brazil Assn. He will make his headquarters in Syracuse.

'Freon' Insect Bomb Development Outlined For A.S.R.E. Section

(Concluded from Page 1, Column 5)

was sought which could be kept in the air for longer periods, this also having the advantage of multiplying the use of a given charge.

Various methods of applying insecticides had been tried, such as power and steam sprayers, but Beltsville Research Center attempted an entirely new approach, namely, the suspension of the insecticide in the air without the usual oil.

This new suspension in air is known as "aerosol," a scientific term denoting colloidal suspension in air. Experiments were made to find a non-flammable carrier that would not decompose when exposed to heat. These experiments led to the use of "Freon-12" in which the insecticide pyrethrum and sesame oil can be dissolved.

A one pound package of this combination, it was said, will successfully fumigate a giant bomber 50 times and is equal in effectiveness to at least two gallons of the best fly spray, thus reducing by about nine-tenths the previously required shipping space.

The insecticide is particularly effective against mosquitos, fleas, flies, ants, wasps, gnats, and fairly effective on roaches, one of the most difficult insects to exterminate.

Three seconds spraying will kill every mosquito in a 1,000 cubic foot enclosure.

THE KEY TO SUCCESS

When the war started, the average age of mechanical refrigeration equipment in food stores was six years. Now it's eight. When the war is won it will be time . . . past time . . . to replace it. ALL of it . . . and at once. Sounds like good business, you say. But listen to this . . .

New food storage applications . . . such as farm and home freezers, locker plants, milk coolers . . . will be waiting. New applications for commercial equipment in industrial processing . . . hundreds of them . . . will be given the healthy impetus of normal competition. New markets . . . the entire world . . . will boost American exports to record levels.

This is NEW business . . . bonus business . . . business you have never enjoyed before. To the man who sees it coming . . . who is ready . . . it means SUCCESS!

But . . . you can't do it alone. You'll need help . . . lots of it . . . from others who see this new business coming . . . who ARE ready. Remember this when you lay plans for YOUR SUCCESS.

Bush production . . . heat-transfer equipment EXCLUSIVELY . . . is filling the war requirements of Army, Navy, Air Forces and Merchant Marine. It is STILL supplying essential civilian needs and . . . IN ADDITION . . . it is playing a major role in the development of the NEW business which will be the key to your success.

Remember THIS when you lay your plans.

PENGUIN PETE

P. S. For the MASTER key to success . . . BUY BONDS.

BUSH MANUFACTURING CO.
Commercial Cooling Units
HARTFORD CONN · 415 LEXINGTON AVENUE NEW YORK · 549 W. WASHINGTON BLVD. CHICAGO